PARADIGMATIC STATUS AND REFORM POTENTIAL OF IOWA SUPERINTENDENTS

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The problem: Because it is difficult for the educational practitioner to ascertain the direction of educational reform, this study surveyed a sample of superintendents on their views, suggested by Thomas Kuhn's work on paradigms, on the classical schools of education, perennialism, essentialism, progressivism, and social reconstructionism, and on the three state-offered reform initiatives in Iowa, The Iowa Initiative for World-class Schools, the New State Standards for Iowa Schools, and the views of William Lepley, director of the state Department of Education.

Procedures: From the 376 superintendents in Iowa, thirty were chosen, representing those with little, moderate, and high tenure. Each subject was given the Educational Ideologies Inventory (O'Neill, 1981), which produced a score for each subject for each of the four classical schools, and asked a series of questions designed to reveal their opinions on the components of the Iowa reform initiatives. Chi Square, Analysis of Variance, and qualitative analyses were performed on the data. Because of the nature of these data collection instruments, each subject was personally visited by the researcher.

Findings:

1. While no educational paradigm was found to exist among Iowa superintendents, progressivism was the educational school voiced by the great majority of the subjects.

2. Tenure in office bore no statistically significant relationship to educational school held by the superintendents.

3. The superintendents did not express preference for any of the three reform initatives over the other two.

4. A relationship, though not demonstrated statistically, between tenure in office and support for specific reform proposals, did exist.

Recommendations:

1. Further research should be conducted on educational stakeholders' views on the individual components of the classical education schools and on the changes in stakeholder's view over time.

2. Increasing support for specific reform proposals, among the ten offered in the three reform initatives, is possible through state action aimed at removing obstacles perceived by school district superintendents.

3. A synthesis of these three reform initiatives will assist the Iowa educational community in implementing the offered proposals rather than advocating specific reports without requisite attention to their similarities and differences in content.

For George and Hilda Thom,

Godspeed.

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Chapter 1

INTRODUCTION

Educational reform was a serious topic of discussion in Europe long before public education even began in America. Since its birth in America, public education has also been constantly in the throes of various reform movements (Knight, 1940; Kaestle, 1990). One small, though distinguished, part of the American educational scene, the public educational system of the state of Iowa, is in a similar position today. Reform or restructuring (English & Hill, 1990), as some prefer to call it, movements have been unmistakably evident in the state of Iowa during the late 1980's and early 1990's.

Three particularly significant and public manifestations of this reform include the Iowa Department of Education's new standards for schools issued in October of 1988 (New Standards for Iowa's Schools,1988), the vision of education for the future of Dr. William Lepley, Director of the Iowa Department of Education, and the report of The Iowa Initiative for World-Class Schools (Business and Education Roundtable, 1990), hereafter referred to as the Hornbeck Report. Each of these reform 'initiatives' has come into being in the last 3 years and thus the permanence of their contributions to education in Iowa is unclear. In addition, due to a lack of research on the three initiatives, it is not even clear what actual impact they are currently having on education in Iowa.

The amount of influence that any of these three initiatives does and/or will have on Iowa education is dependent on the degree to which they are

adopted by Iowa schools. Before reviewing that issue, however, it is relevant to briefly describe each of the initiatives in question. The new state standards for Iowa schools (1988) were created by the Iowa General Assembly, the state legislature, and mandated for all accredited schools as of July 1, 1989. The standards, of course, are a mix of requirements pertaining to administration, school personnel, the education program, extracurricular activities, and staff development. They include elements from a number of different schools of thought. Requirements for instructional time audits (12.35), assessment of learning objectives (280.12 and 280.18), and sequential performance-based courses in vocational education (1991 amendments to 256.11 6h) all tend toward an objectives-based approach. The standard requiring a talented and gifted program (12.512) seems to assume a view of education as a releaser of human potential. Provisions for global education (12.511), health and human growth education (12.53e, 12.54e, and 12.55e) and multi-cultural, non-sexist curriculum and instruction (12.58) all aim towards solving social ills and changing society for the better. As a result of such diversity, the standards are not easily classifiable though their importance is potentially great since they carry the power of law. Penalty for standards non-compliance, in the eyes of Department of Education consultants, is dissolution of the school district (Staff, 1991b).

Lepley's vision of the future for education carries no such might. His impact on education depends almost solely on persuasion. While he has communicated his visions through a number of different media, including

written articles in the Dispatch, a monthly newspaper put out by the Iowa State Department of Education, speeches to groups interested in education, and directives to the Department of Education on the direction of various state and federal programs, the clearest summation of this vision came out in a small pamphlet entitled, Creating the Ideal Schools (Lepley, 1990a). In this pamphlet, Lepley asks the reader to divest himself of his current view of 'school' and to imagine a school district of 2010 which will have the following characteristics:

1)Curriculum is not bound by age or grade level boundaries.

2)The school has become a place not only for education but also for all other community and public resources, including "Health services, job services, and human services...." (Lepley, 1990a, p. 2)

3)Teachers have increased skills due to college internships at clinical schools, teacher mentoring programs for novice teachers, increased preparation time, and greater collegiality;

4)Technology has been infused into classrooms, allowing better instruction and instantaneous communications with teachers and researchers across the nation. The most notable change is the microcomputer at each child's desk, linked to other students and software and databases of enormous diversity.

5)Building administrators have refined their skills to allow for increased monitoring of student progress and enabled their teachers to more accurately diagnose learning needs of their students and prescribe techniques to fulfill

these needs;

6)Curriculum is structured so that all areas are integrated and so that all learning is outcomes-based with the overriding assumption that all children can learn no matter what their backgrounds or problems;

7)District boundaries are porous, allowing students to freely move from one district to another so that they may take advantage of programs in other schools with stronger emphases in desired programs;

8) Post-secondary courses in all areas are offered for vocational school and college credit on site;

9)Educational outcomes emphasize "cooperative learning,individualized instruction and an experience-based approach to learning" along with "higher order thinking and the development of skills needed to make decisions, solve problems and obtain information." (Lepley, 1990a, p. 6)

That Lepley's long-term views are expressed in this pamphlet is supported by the fact that many of his "From the Director" columns in the Dispatch have dealt with these same issues in a manner consistent with the content of Creating the Ideal Schools (Lepley, 1990a). The February, 1990 Dispatch column, "Cutting the chains of the calendar and the clock," (Lepley, 1990b) attacks the artificial time constraints placed on education dealt with in points 1 and 2. The March, 1990 Dispatch column, "Technology can bring success to Iowa restructuring movement," (Lepley, 1990c) more fully outlines the improvements that can be made in education pointed to in point 4 of his pamphlet. More recently, "Defining outcomes for educators and students will

enhance human resources" (Lepley, 1991) called for better identification of outcomes and better assessments of those outcomes, as outlined in point 6. Finally, in the September, 1990 column, "Nineties will be decade of school transformation," (Lepley, 1990d) he goes on to predict that many of the changes outlined in his pamphlet will occur during the decade of the 1990's. Lepley, then, has a clearly articulated and communicated vision for Iowa schools. Whether he will be able to transform that vision into actual reform is, however, unclear.

The final reform initiative to be discussed here is the Hornbeck Report. In March of 1990, a task force comprised of members from the Iowa State Board of Education, the Iowa Business and Education Roundtable, and the Iowa Future Project was established and given the job to:

> ...define 'world class' education, assess the current status of education, set specific goals to achieve a world-class elementary-secondary education system and determine strategies to attain the goals. (Business and Education Rountdable, 1990, p. 1)

The final report includes sections on the need for world-class schools, a definition of 'world-class', philosophical and foundational beliefs about education and children, results of world-class schools, and recommendations for creating world-class schools in Iowa. Though it is somewhat difficult to classify, like the state standards, its comparative brevity allows a meaningful inclusion of some of the major educational principles found in the sections on beliefs and results of world-class schools. The following is directly quoted from the Hornbeck Report though the outline format has been added for reader

convenience:

I. Foundations:
   A. Assumptions:
      1. Virtually all students can learn at high levels.
      2. Ways exist to teach all students successfully.
      3. What students learn should be challenging to all.
   B. Guiding Principles:
      1. Iowa's world-class education system should be based on results.
      2. Student performance should be measured with a variety of tools that reflect the complexity of what students are expected to learn.
      3. Successful schools, judged on student achievement, should be rewarded, unsuccessful schools should be helped to improve, and consistently inferior schools should be penalized.
      4. Staff in individual schools must have the authority to make decisions affecting student achievement and must be accountable for results.
      5. Educators must have the training, knowledge, and leadership skills to help students succeed.
      6. Readiness for school is critically important.
      7. Schools in the new system must be responsible for ensuring collaboration with health and human services agencies to reduce barriers to student learning.
      8. Schools must assist parents in assuming their full role as partners in educating their children.
II. Results of Successful Schools
   A. Result 1: Each student will be able to read, write, speak and listen and to use math and foreign language skills for purposes and situations similar to what he or she will encounter in life.
   B. Result 2: Each student will be able to apply core concepts and principles from subjects such as mathematics, the sciences, the arts, the humanities, social studies, and practical living studies to situations and problems similar to what he or she will encounter in life.

C. Result 3: Each student will become a self-sufficient individual and a responsible member of a family, work group and community.
D. Result 4: Each student will be able to think and solve problems both in school situations and in a variety of situations similar to what he or she will encounter in life.
E. Result 5: Each student will be able to connect and integrate experiences and new knowledge from all subject matter fields with what he or she already has learned.
F. Result 6: Each student will successfully complete a high school education.
G. Result 7: Each student will make a successful transition to the work place or postsecondary education after high school graduation. (Business and Education Roundtable, 1990, pp. 9-15.)

While there is certainly more to the Hornbeck report than this, the above assumptions, guidelines, and results paint a fairly descriptive picture of its contents.

The educational system in Iowa, then, has three reform initiatives before it. The three certainly have many similarities, one example of which is the emphasis on assessable student-results. But the initiatives also have some stark differences, including the locus of power inherent in each reform. The new standards can force compliance through a state government enforcement mechanism; the reforms outlined in the Hornbeck Report explicitly call for strong and innovative local control with outside intervention only after consistent incompetence is demonstrated. Thus, educational reform could follow certain principles of all three but must also deny principles of one initiative to adopt those of another. Yet, whether any of the principles will be or have been adopted in practice is, as stated earlier, unclear.

Purpose and Significance of the Study

Until something is known about the potential influence of these individual initiatives, it is difficult to gauge their importance. But of course, reform measures go quite beyond these three reform proposals; a comprehensive list of all possible reform ventures would be difficult if not impossible to compile for Iowa, and a Herculean task to compile for the entire country. How, then, can some knowledge of educational reform status and potential in Iowa be gauged? It was the purpose of this study to assist the education practitioner in reform decision-making by locating, revising, or developing, and then implementing a plan of action for collecting information on the current educational status and reform potential in Iowa. More explicitly, the information collected as a result of this study spoke to two questions: What is the current philosophical status of education in Iowa today? What is the potential for particular reform movements in Iowa? In a later section, these questions are phrased quite differently and substantially more narrowly since terminology and concepts adapted from the work of Kuhn (1970) are used. Kuhn, author of The Structure of Scientific Revolutions (1970), speaks of the philosophical status of a field as a paradigm or disciplinary matrix and reform as paradigm shift.

Finding information on the philosophical status and potential for reform of education in Iowa is an endeavour of importance from a number of different perspectives. These perspectives range from the extremely pragmatic to the highly philosophical.

Clearly the most pragmatic use of such findings is for the current

proponents of reform in Iowa. Though there is some degree of overlap in their ideas and in the membership and influence of the three parties, it is still true that the General Assembly, Lepley, and the Business and Educational Roundtable task force each have their own vision of education in Iowa that they are hoping to see implemented. Each of these three proponents is attempting to lead the Iowa educational establishment into a future of their own perception. As Hersey and Blanchard (1969) demonstrated so well, the ability to lead depends on knowledge of the 'maturity' of the followers. For example, if Lepley wishes to bring educators around to his vision, he must first learn how capable and how willing they are to move in that direction. Hersey and Blanchard (1969) characterized followers as having high or low needs for direction and support. The optimal leadership behavior depends upon the type and degree of the needs of the followers. Thus, knowing the philosophical status and reform potential of educational practitioners in Iowa may assist any of these prospective reformers in selecting the most productive leadership behaviors.

A second importance of these findings runs parallel to the first. It is certainly true that information on the philosophical status of education in Iowa would be pertinent to those trying to reform it, but it is also highly pertinent to the followers in that it gives some indications of the current 'front runner' in educational reform. Lepley and the new state standards have each been in place for roughly three years. Some impact from each can reasonably be expected. The Hornbeck Report, while only recently published, has enjoyed wide distribution and discussion throughout the state. As such, it is possible

that one of the three reforms is gaining wide support among educational practitioners. If so, education in Iowa may be in the midst of a paradigm shift, a concept that is explained more fully in the next chapter. Likewise, the three reform movements may be completely ineffectual. Whatever the findings about practitioners, the findings of this study will be inherently interesting in that they will speak to the future of Iowa education.

The findings of this study may also have pragmatic uses outside the realm of Iowa education because of the unique educational status of the state, typically ranked number one among the states in student performance (Staff, 1990a; Business and Education Roundtable, 1990). While there are certainly many reasons for these consistently high rankings for Iowa, the philosophical perspective on education of Iowa practitioners could be one. Knowing that perspective would allow further research to investigate whether practitioner beliefs in Iowa were fundamentally different than practitioners beliefs in stateswhich have lower scores on learner performance. Perhaps one key to productive reform is moving towards a particular philosophical viewpoint.

The philosophical viewpoint of educators is also interesting from an other than pragmatic standpoint. Students of the foundations of education are well acquainted with the fact that education has a small number of classical schools of thought. Inasmuch as practitioners are often manifestly uninterested in such philosophical constructs, they are sometimes assumed to have no impact on actual practice. The truth, however, is that these schools of thought are so all-encompassing that it is impossible to operate outside of their context. The

educator can remain ignorant of their existence but cannot escape their efficacy, much like the child who uses inductive logic without ever having studied Aristotle. The philosophical status and reform potential of educators in Iowa were examined through a comparison of their beliefs to the postulates of four of those classical schools of thought on education. Recognizing the philosphical footings of Iowa educators will surely add to the paradigm debate between respective advocates and may strike at the notion of irrelevance of those schools of thought for the non-philosophic practitioner.

Finally, and possibly least pragmatically, this study is a report of an interesting application of the work of Kuhn (1970). Kuhn's work on paradigms and their dependence on the consensus opinion of a field's community members made it highly relevant to this study. More specifically, his discussions of paradigm shifts, the process of reform in a field of study, offered specific insights and methodologies for an analysis of education reform of this sort. Using Kuhn in this way added to the many educational studies using his concepts (Aquirre, 1981; Boldt, 1969; Bowen, 1972; Fennell & Liveritte, 1979; Hairston, 1982; Tuthill & Ashton, 1983) but, atypically, attempted to remain true to the process of paradigm shift he outlined, as will be shown in Chapter II. As such this report speaks both to education and to the further validity of applying Kuhn to areas outside of the natural sciences.

Each of these 5 purposes can be meaningfully spoken to through this report, a Kuhnian analysis of the philosophical status and reform potential of educational practitioners in Iowa.

Rationale for the Study

This philosophical status and reform potential is, in the end, deduced from the consistency of the expressed viewpoints of educators with one or more of the classical educational schools. It was Kuhn's view, substantiated with historical evidence in the natural sciences, that a field of study adopted a paradigm from one of the classical schools which vied for pre-eminence in that field (Kuhn, 1970). Therefore, the most productive place to look for educational paradigms which exist within some comprehensible, conceptual boundaries, is in the identified classical schools of education. Other researchers have attempted related goals, which will be discussed at greater length in Chapter II, including the creation of new educational paradigms and the search for current educational paradigms without starting from specific philosophical categories like the classical schools. This investigation, on the other hand, attempted to answer a much smaller question, but a question which has great bearing on education in Iowa. What is the current paradigmatic status and reform potential of educational practitioners in Iowa? Other, more practical and more specific, questions will surely arise but this question required an answer before any other can be seriously studied.

Before moving directly into the procedures by which this question was answered, however, it is first necessary to review the work of Kuhn (1970), the philosohical background of the field of modern education, and any additional research studies, pertinent to this investigation. These reviews are the work of Chapter II.

Chapter 2:

LITERATURE REVIEW

Introduction and Scope:

It was the intent of this investigation to examine the current philosophical status and reform potential of educational practitioners in Iowa. Doing so required a review of several different lines of thought and research. The first such line consisted of national reform reports and movements. In order to view the reform picture in Iowa, it was first necessary to at least briefly examine what sorts of reform movements have affected the national education scene in recent times. Once this was done, the three Iowa reform initiatives identified in Chapter I were re-examined for their ties to the identified national movements. While a brief look at national and state reform movements was clearly necessary for the creation of a conceptual milieu of reform, what was notably lacking was any method of judging just how such reform movements take hold. Reform is of no consequence unless it has some actual impact on schools and teaching (Sergiovanni, 1989). Reform movements are born and exist, but how is it that they come to change how educators think and, subsequently, how people in schools act?

One response is that offered by the second line of thought and research, the work of Kuhn on paradigms and paradigm shift. In his essay, Structure of Scientific Revolutions (Kuhn, 1970), Kuhn outlines the process by which the philosophical underpinnings or paradigm of a field come under attack and eventually are changed to some new set of philosophical underpinnings or

paradigm. This process, adopted by many other researchers (Gutting, 1980) to explain reform in numerous fields including education, can be productively utilized to view educational reform and the current philosophical status of education. The main difficulty in applying Kuhn to education is the necessity to search for possible paradigms for education.

Kuhn's work, based on historical examinations of paradigm shift in other fields, points to the classical 'schools' of thought in a field as the major contenders for the final, consensus-based paradigm (Kuhn, 1970). For that reason, the third line of thought to be discussed in the literature review will be a description of each of the major classical, philosophical educational schools of thought. Specifically, Perennialism, Essentialism, Progressivism, and Social Reconstructionism will be reviewed as theoretical competitors for *the* educational paradigm. Since these classical schools are paradigm candidates according to Kuhn's process of paradigm development (Kuhn, 1970), any assessment of the philosophical status and reform potential of education in Iowa must include significant awareness of them in the process.

Finally, because the theoretical framework created through the review of these three lines of research could be supported by the demonstration of similar research projects by others, two types of research studies are offered as precursors to this study, in the section 'Analysis of Studies Related to this Research.'

National Reform Reports and Movements

As stated at the beginning of Chapter 1, the topic of reform is a

perennial issue in education. Even in the very beginning of education in America, religious sects were sponsoring their own schools and curricula out of the perceived need for reform in existing schools (Ornstein & Levine, 1984). It is this pervasiveness and longevity of reform activities that makes it difficult to decide just which reform reports and movements should be included in even a brief discussion. The launching of Sputnik by the Soviets in 1957 helped to initiate reform proposals and spur enthusiastic debates throughout the sixties.

> Confusion characterizes the current situation in educational reform. The last wave of school reform, beginning in the fifties and continuing through the sixties, was one of the largest and most sustained reform movements in American educational history. Many observers believed that the movement would transform American education. But as Charles Silberman concluded: 'Nothing of the sort has happened; the reform movement has produced innumerable changes, and yet the schools themselves are largely unchanged. (Rich, 1979, p. 39.)

A review of the reform literature from 1957 to the current date would produce a great deal of intrinsically interesting reform analysis but much of it would be simply irrelevant because the latest wave of reform publications began in 1982 (Passow, 1989). Therefore, this review of reform reports and movements will extend back only to 1982, with the publication of The Paideia Proposal (Adler, 1982), for it was in 1982 and 1983 that the "first wave of reform reports of the 1980s" (Passow , 1989) were issued. The following reports, selected because of the myriad references to them in the literature (Spady, 1984; Tanner, 1984; Passow, 1989; Lewis, 1989), of that wave will be briefly reviewed here: The Paideia Proposal(Adler, 1982), A Nation At Risk (National Commission on Excellence in Education,1983), Action for

Excellence(Task Force on Education for Economic Growth,1983), Educating Americans for the 21st Century(National Science Board Commission on Precollege Education in Science, Mathematics and Technology, 1983), High School (Boyer, 1983), A Place Called School (Goodlad, 1983), and the first volume of A Study of High Schools, Horace's Compromise (Sizer, 1984). Passow also talks about a second such wave of reform reports and/or movements since then. For this particular research, three will be mentioned, though none were discussed in Passow because of their recency. These include the School Reform Act in Chicago (Rist, 1990), the Education Reform Act of 1990 in Kentucky (Harrington-Lueker, 1990), and the National Education Goals set forth by President George Bush and the National Governors Association (Staff, 1991a). Each of these ten reports and movements is summarized below.

The Paideia Proposal (1982) by Adler, noted Aristotelian philosopher and education perennialist, was written as a means of communicating the views of the Paideia Group. In this work, Adler calls for a one-track educational system in which all students are thoroughly instructed towards full participation in the American democratic system, spiritual and mental growth, and meaningful participation in the American economic system. This instruction includes "didactic instruction-lectures and responses," "coaching, exercises, and supervised practice," and maieutic or Socratic questioning and active participation." (pp. 22-31) Adler and his group have set forth one overarching premise, "There are no unteachable children." (p. 8) That being the case, all

should receive the same curriculum; to do otherwise is inequitable and undemocratic.

The very next reform report to come out, A Nation at Risk (National Commission on Excellence in Education, 1983), caused unprecedented attention to be directed at American education. This official federal document laments the progress other nations are making at ending America's economic dominance in the world and places the blame for this squarely on American education. The solutions recommended in this document include a return to curriculum basics, raising academic standards, and requiring more Carnegie units in core high school courses such as English, math, and science. In addition, it points to increased financial support and improved textbooks as partial solutions. The urgency of the message presented in A Nation at Risk can best be summed up through its most famous quote: "If an unfriendly foreign power had attempted to impose on America the mediocre educational perormance that exists today, we might have well viewed it as an act of war." (National Commission on Excellence in Education, 1983, p. 5) School reform means higher standards and more academic rigor, especially at the high school level.

Making similar linkages between mediocre schooling and loss of economic prowess, the report, Action for Excellence(1983), was issued by The Task Force on Education for Economic Growth. The solution to this economic demise is the expansion of the idea of basic skills to all areas connected to later employment. Besides math and science, students should also be

instructed in computer literacy and reasoning. One way of teaching these new skills most effectively is through strong school-business partnerships, even including 'vocational' (though this term is less meaningful under the premises of the report because the primary purpose of education therein is to enable students to find jobs) courses taught on-site at private businesses (The Task Force on Education for Economic Growth, 1983). The report also includes recommendations for raising teacher salaries, increasing federal aid to schools, and bettering assessment of student learning (The Task Force On Education for Economic Growth, 1983). Again, all of this is directed toward improving the economic status of America in the world.

Another report issued in 1983 pushed for school reform in order to improve the economic and political situation of America. In that same year, the Commission on Precollege Education in Mathematics, Science, and Technology issued its findings entitled, Educating Americans for the 21st Century (Task Force on Education for Economic Growth, 1983). As the commission's name implies, the report dealt almost exclusively with the content areas of math, science, and technology because of its premise that these areas would strenghten America economically and politically. Its call for a return to basics included the areas of scientific literacy, thinking skills, and technological literacy (Commission on Precollege Education in Mathematics, Science, and Technology, 1983). Seemingly echoing A Nation at Risk (1983), it also called for higher graduation requirements to be mandated by individual states (Commission on Precollege Education in Mathematics, Science, and

Technology, 1983). Because of the inability of others to manage the task, made manifest in the current state of American eduation, the report also called for a presidential commission on education to continuously assess student learning and set goals for education in the United States. Overall, the report was quite focused on those areas it felt were in need of improvement but was still consistent with the two reports that preceded it in 1983.

A report very different from those described above was High School: A Report on Secondary Education in America (1983), authored by Ernest Boyer, president of the Carnegie Foundation for the Advancement of Teaching. It was different in two ways. First, it sent researchers into the field to observe the workings of typical high schools in America and to make conclusions on those observations. Second, it included more recommendations for the improvement of teaching rather than simply advocating more of it. The main focus of the report, in fact, was on ways to improve the instructional effectiveness of secondary teachers. The first method of causing this was curriculum reform. Boyer and his commission advocated the establishment of curriculum priorities and essential student learning outcomes. The entire curriculum was to be created around these. While a system of units, similar to Carnegie units, was to continue to exist, these units were created around the learning outcomes. Due to the enumeration of these learning outcomes, teachers would be better able to help students meet the expected outcomes. Additionally, more professional growth opportunities, better working conditions, increased training, and more vigorous teacher recruitment were

advocated. While definite recommendations on curriculum and student outcomes were made, much more emphasis than in earlier reports was given to the primary educational input, teachers and instruction. Boyer's commission issued their report after attempting to directly observe the educational process at the secondary level.

John Goodlad's A Place Called School (1983) was even more observation-based than contemporary reports inasmuch as the findings and recommendations proceeded from his team's research on over one thousand actual classrooms. Like High School (1983), the Goodlad report also focuses more on the process of education than on simply increasing the requirements therein. Goodlad, though he does not explicitly spell out the alternative, calls for a revision of the current age-graded school (Goodlad, 1983). He pushes for more integration of subjects throughout the day and more actual instruction during classtime. Rather than having physics and English literature, the student would takecourses in the three areas of Cognition, Language, and Art. Within these areas, all courses would be integrated. In such a system, tracking would cease to exist along with teachers' tendency to offer excellent instruction to the higher track and drill and practice to the lower. Finally, Goodlad calls for public education to begin at age 6 and end at age 16. By making these seemingly radical changes, Goodlad feels that both educational and societal objectives would be met.

To some, the final 'first wave' report, A Study of High Schools, is also quite radical. The first volume of this report, Horace's Compromise: The

Dilemma of the American High School (1984) was written by Theodore Sizer. In it Sizer describes the impossible task facing a mythical though typical English teacher, Horace, and the inadequate education that results because of it. To remedy the situation, Sizer proposes a number of recommendations for re-structuring the school situation. First and foremost,Sizer wishes to reduce the number of students for which any teacher is responsible. Current loads make motivation and authentic assessment of student progress impossible (Sizer, 1984). One way of doing this is to simplify the school day by having students take fewer classes but for longer periods of time. Students are not assigned to classes by age but rather by similarity of learning outcomes. The curriculum includes student outcomes which take greater precedence than 'classes.' Students move through the expected outcomes as quickly as they are able and move to groups of other students working on the same outcomes. The "bureaucratically neat" (Sizer, 1984, p. 223) system of age-grading is not best for students and so should be done away with in favor of a system based on outcomes-grading (Sizer, 1984). What emerges from all of this is a system in which students move through a fluid organization, are constantly assessed for learning outcomes, and spend their days in a very few classes. Sizer, like Adler, has gone beyond his writings to help establish the Coalition of Essential Schools, an organization which has recruited schools for the implementation of these school reforms. Well over fifty schools have become 'Essential' schools (Lewis, 1989; Chion-Kenney, 1987; Aronoff & Toloudis, 1987; Groesbeck, 1989; Wiggins, 1987).

In 1983 and 1984, a great number of educational reform reports were issued lamenting the condition of and suggesting methods of improving education in America. That these reports have influenced reform efforts in Iowa can most easily be seen in the New Standards for Iowa Schools (1988). The many new curriculum requirements, the more stringent rules for the length of the school year, and the mandated assessments of student learning all echo recommendations of these reports of the early and middle 1980's. But three more recent reform reports and initiatives also have bearing on Iowa reform trends today, the School Reform Act in Chicago (Rist, 1990), the Education Reform Act of 1990 in Kentucky (Harrington-Lueker, 1990), and the National Education Goals (Staff, 1990).

The School Reform Act in Chicago (Rist, 1990) was passed by the Illinois legislature in 1988 and was in effect for the 1989-90 school year. Essentially, the Act mandated site-based school governance for the Chicago schools. The school board and central administration were stripped of much of their power and, in part, dissolved. Almost total control of budgeting, curriculum, planning, hiring, and firing was turned over to school councils, a board which functions much like a school board except that its authority is building-wide rather than district-wide. These councils include a majority of parent membership, thereby increasing the likelihood that the approach would be truly bottom-up (Rist, 1990). Kentucky's Education Reform Act of 1990 has a similar decentralization theme but operates on a state-wide basis. One of the chronologically first provisions of the Act dissolves the Kentucy state

department of education. While such an agency will be re-instituted in some fashion, its role will no longer be regulatory but instead will asses local school district performance and reward or punish on that basis. Site-based management will be mandated for each local district. School boards will still exist but they will be stripped, aside from the hiring of the superintendent, of their personnel functions. That power, along with the determination of curriculum, attendance policies, and local budgeting, will go to local school-based councils made up of two parents, three teachers, and the principal. Schools will be assessed based upon measurements of student outcomes. A final major reform occurs at the level of the elementary schools which become wholly non-graded and thus totally student outcomes-based. It is interesting to note that both the Chicago and the Kentucky reforms have a great deal in common with the ideas of Boyer, Goodlad and Sizer.

An even more recent reform proposal, The Nation's Education Goals (Staff, 1991a) includes some ideas in common with these and some in common with A Nation at Risk(National Commission for Excellence in Education,1983), Action for Excellence (Task Force on Education for Economic Growth, 1983), and Educating Americans for the 21st Century (National Science Board Commission on Precollege Education in Mathematics, Science and Technology, 1983). Two of the stated goals look toward fundamental changes in school and curriculum organization.

> By the year 2000, American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter

> including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.
> By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship. (Staff, 1991a, p. 9)

But two of its goals simply demand higher standards of American schools:

> By the year 2000, the high school graduation rate will increase to at least 90 percent.
> By the year 2000, U.S. students will be first in the world in science and mathematics achievement. (Staff, 1991a, p. 9)

The final two goals are not as easy to characterize mainly because they are societally-linked goals which few of the major reform reports have discussed.

> By the year 2000, all children in America will start school ready to learn.
> By the year 2000, every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning. (Staff, 1991a, p. 9)

Nevertheless, these 6 goals apparently encompass the educational goals of the political chief executives of the United States.

The influence of these seven earlier and three later report/initiatives on the three reform initiatives in Iowa varies to some degree. The earliest reports which called for mandated higher and more rigorous curriculum requirements for graduation are certainly echoed in many of the new Iowa curriculum standards which require additional courses to be offered and taught (New State Standards for Iowa Schools, 1988). The second set of early reports called loudly for the development of student outcomes. That has come through very clearly in the Hornbeck Report (Business and Education Roundtable,

1990) and in Lepley's vision statement (Lepley, 1990a). The later reports have called for decentralization. Decentralization is the crux of the reforms called for in the Hornbeck Report. Thus, while there is no way to conclusively demonstrate that these national reports and initiatives have influenced Iowa reforms, a definite trends exists which is consistent with both the national and state reforms.

How Reform Initiative Becomes Actual Reform Through the Perspective of Thomas Kuhn and 'The Structure of Scientific Revolutions

Understanding conceptual connections between national reform reports and initiatives and Iowa reform reports and initiatives reveals little about their potential for becoming educational reality. What is needed is some model for the process through which reform is implemented. Kuhn in his essay, The Structure of Scientific Revolutions (1970), offered one highly persuasive model of this process for scientific fields of study. It is the process promulgated by Kuhn that is used in this study to evaluate the paradigmatic status and reform potential of educational practitioners in Iowa.

Since this is the case, it is first necessary to carefully review Kuhn's theses on the history and sociology of science. Though it may seem unlikely that an essay, as Kuhn refers to his work The Structure of Scientific Revolutions (SSR), on the history and sociology of science should have applicability to educational reform, it does, and this proposition will be supported at length in another section in this chapter. Discussion of Kuhn's ideas is divided into the following seven sections: 1)Background to Kuhn and his essay, 2)An initial

definition of 'paradigm,' 3)The characteristics of fields of study without paradigms, 4)The sequence of events in a paradigm shift, 5)The non -subjectivity of paradigms and paradigm shifts, 6)The relationship of paradigms to learning communities, and 7)The 'proper' definition of 'paradigm.' While the extent of this review may seem lengthy, the lack of thorough review of Kuhn's ideas in many of the works quoted in this paper call the findings of that research into question. Hopefully, this discussion will either fully validate the application of Kuhn's ideas to areas outstide the physical sciences including education and educational reform or it will at least explicate the delimitations of the assumption that Kuhn's idea do apply.

Kuhn and The Structure of Scientific Revolutions:

In the preface to SSR, Kuhn gives some background on himself and his essay. Kuhn began his academic career in theoretical physics and later branched off into the history of science. He was trained as a natural scientist and substantiates his thesis in SSR with historical examples from natural science (Kuhn, 1970; Steiner, 1986).

The essay, itself, was initially written as one volume of the Encyclopedia of Unified Science, requiring a condensed version of Kuhn's ideas. While this may have left some issues unclear, Kuhn has added postscripts to the original essay through which he has attempted to clarify points of confusion. (Kuhn, 1970; Tuthill & Ashton, 1983) This leaves two options to the student of Kuhn:

Work only with the original source or use both the original source and any later commentaries that Kuhn offered on it. This investigation took the latter course, even though later commentaries frequently further cloud rather than clarify certain issues.

Initial Definition and Discussion of 'Paradigm:'

As Kuhn, himself, states in the postscript to the 1970 edition of SSR, "...'paradigm' names the central philosophical elements of the book,..." (p. 181.) It is this term, in fact, which has been used to launch a thousand research programs (Wells & Picou, 1981; Gutting, 1980; Fennell & Liveritte, 1979), to kick off President Bush's new social program of 'empowerment' (Thomas & McDaniel, 1990; Pinkerton, 1990), to create a core concept for a system of visionary leadership by Joel Barker (Barker, 1989) and to give semantic focus to any numbers of calls for change in many and diverse fields (Carlson, 1990). Kuhn commented on this trend much earlier by admitting that "...their reaction has nevertheless puzzled me." (1970, p. 208) In so stating, Kuhn was not discouraging attempts to use the term paradigm broadly, but only at the apparent lack of understanding of the term as he defines it that went into these attempts.

Unfortunately, Kuhn was less than systematic in defining the term himself. One commentator, in fact, lists twenty-one different operational uses for paradigm in SSR itself (Masterman, 1970). But too often attacks on consistency of terms becomes a pursuit in itself, as with those practitioners of

philosophy who spend their professional careers documenting the vast number of ways Aristotle used the term 'good.' In order to best describe the meaning of paradigm, several of Kuhn's definitions will be offered below, followed by discussions of the importance of paradigms , the advantages to a field of study of having a paradigm, and the disadvantages to a field of study of not having a paradigm.

Inasmuch as providing a complete list of Kuhn's definitions of the term would be repetitive and overwhelming, the following are offered from SSR as a representative sample:

"These (paradigms) I take to be universally recognized scientific achievements that for a time provide model problems, and solutions to a community of practitioners." (p. viii.)

"(A paradigm will give) firm answers to questions like the following: What are the fundamental entities of which the universe is composed? How do these interact with each other and with the senses? What questions may be legitimately be asked about such entities and what techniques employed in seeking solutions?" (pp. 4-5)

"(Paradigms are made up of) law, theory, application, and instrumentation together--..." (p. 10)

Scientists derive conceptual (law), theoretical (theory), instrumental (instrumentation), and methodological (research design) commitments from paradigms. (pp. 40-42.)

"Paradigms may be prior to, more binding, and more complete than any set of rules for research that could be unequivocally abstracted from them. ...paradigms could determine normal science without the interventions of discoverable rules." (p. 46)

"...paradigms guide research by direct modeling as well as through abstract rules." (p. 47)

"The introduction to this essay suggested that there can be small

revolutions (paradigm changes) as well as large ones, that some revolutions affect only the members of a professional sub-specialty, and that for such a group even the discovery of a new and unexpected phenomenon may be revolutionary." (p. 49)

"They (paradigms) are the source of the methods, problem-fields, and standards of solution accepted by any mature scientific community at any given time." (p. 103)

If one uses the many definitions offered by Kuhn in his original work, a paradigm becomes something akin to the philosophy of a field of study or sub-specialty of a field of study which provides the legitimate topics of study, law, theory, instrumentation, research design, criteria for solution, and boundaries of the field as perceived by the community of scholars in that particular field or sub-speciality, often capsulized in a classic piece of research which includes and demonstrates each of these parts of the paradigm. This definition is both extrapolated from SSR and consistent with the paraphrased definitions of several other authors (Wagner, 1986; Barker, 1989; Gregory, 1987; Wade, 1977)

Knowing what a paradigm is does not necessarily explain its importance, though from the above definition, the importance is readily discoverable. A paradigm is critical to a field of study first and foremost because it guides an entire community's research efforts in a single direction (Kuhn, 1970; Miller, 1987; Gutting, 1980). Without a paradigm, research is possible but is unlikely to have a unified direction. A community consensus on acceptable research areas that paradigms permit is a prerequisite to normal scientific activity (Kuhn, 1970). In addition to creating research consensus, paradigms also literally

create a mental filter for scientific observation. (Tuthill & Ashton, 1983; Kuhn, 1970) Thus, a single phenomenon may be observed differently by two individuals holding different paradigms. As Kuhn put it, "...paradigms speak to perceived reality." (1970, p. 127) And since observations differ based on paradigms, the type of data collected also depends on them. What is observed and what is measured depends on the particular observer. In some cases, the data may actually change, even in the area of chemistry and other natural sciences when paradigms change. Finally, paradigms are critical to areas of study because they become the core of the educational initiation of novices in the field. Paradigms become the catechism of a particular science or area of study. (Kuhn, 1970; Miller, 1987; Wagner, 1986) For these reasons, paradigms are of critical importance to any field of study.

One of the misconceptions that people harbor about this paradigms is that they are negative, causing members of a scientific community and the entire community itself to narrow its vision, much like blinders on a horse. This is in fact the major point of Barker in his workshop videotape entitled The Business of Paradigms (Barker, 1989). Barker's thesis is that commercial enterprises and their leaders get caught up in paradigms which their consumers bypass. The result is an alarming or total loss of market share and possible bankruptcy (Barker, 1989). Unfortunately, the popularity of Barker's program has convinced some that paradigms are essentially negative when in fact the benefits of paradigms vastly outweigh their disadvantages. For example, paradigms allow scientific activities to be highly directed and thus

efficient. They allow individual scientists to move immediately to problem solutions without the laborious effort of constructing the entire artifice of his field from scratch. Paradigms reduce the scope of acceptable problems so as to make scientific activity functional and usually select problems which have paradigmatic solutions. Even more basically, they allow progress. To a certain extent this is definitional in that Kuhn (1970) apparently defines progress as problem solutions within a paradigm, but it also has an external validity. By constraining the number of acceptable problems, paradigms create borders much like those in a child's puzzle. The scientist then fills in the pieces to that puzzle. Without borders, as in the cases of fields which are pre-paradigmatic or in the process of paradigm shift, little or no progress can occur. Lastly and perhaps most interestingly, paradigms have the advantage of allowing for their own demise. Once a field has matured and signficant progress has been made, specific phenomena force their way into observations which are inconsistent with the paradigm. These inconsistencies, labeled as anomalies by Kuhn, may eventually force a paradigm shift. Without the paradigm, inconsistent phenomena cannot be noted as such. (Barker misses this point, at least in the lack of emphasis that he gives it. It is not a paradigm that destroys the vision of business leaders, but rather the lack of attention to anomalies.) In summation then, the advance of any field may depend upon a paradigm (Kuhn, 1970; Steiner, 1986; Wells & Picou, 1981; Wade, 1977).

There are certain disadvantages, nevertheless, to paradigms, many of which are mirror images of the advantages. The efficiency produced by

paradigms through the scientist being able to skip steps that should be clearly understood by other members of his community means that much scientific research and explanation is incomprehensible to the layman. The reduction of the scope of problems available to any field may so restrict the field that productive research areas are disqualified. Kuhn duly notes these disadvantages (Kuhn, 1970).

Characteristics of Fields of Study Without Paradigms:

Some of the discussion of nonparadigmatic fields of study can be deductively assumed from the description above of paradigms in general. However, in as much as the applicability of paradigms to education, a field outside of the natural sciences, can be called into question, a more significant analysis of nonparadigmatic fields is in order.

Kuhn makes no attempt to enumerate those fields with paradigms and those without. Presumably, one could determine the paradigmatic status of a field with knowledge of what constitutes a paradigm. Fields of study with paradigms were once, historically, without them. Typically, prior to the adoption of one paradigm, each field of study was the arena for many different schools of thought offering potential paradigms. These different schools of thought compete for the domination of the field. Though each had a potential paradigm, the community had no consensus opinion on them and so the result was neither scientific nor progress.

A field without a paradigm lacks the advantages which accrue to

paradigmatic fields. Data-gathering activities are pursued in multiple directions and in a random fashion. Too often data gathered is simply that which is simplest to find since no paradigmatic criterion is provided for data selection. The result is an ever-swelling mass of data which leads to no discernible progress. A solution to the problem occurs when the community embraces one of the schools of thought to the exclusion of the others. That school's paradigm becomes the paradigm for the entire field. But without an initial paradigm, data collected during the pre-paradigm period is rarely persuasive enough to convert members of other schools. Thus, while pre -paradigmatic pursuits can lead to a paradigmatic field, the process is long, contentious, unlikely, and fraught with unproductive activity (Kuhn, 1970).

Sequence of Events in Paradigm Shift:

A paradigm shift is simply the change in a field of study from one paradigm to another. Kuhn stated this as, "...scientific revolutions are here taken to be those non-cumulative developmental episodes in which an older paradigm is replaced in whole or in part by an incompatible new one" (1970, p. 92). Kuhn devoted much of SSR to the process through which this occurs and he also noted that the process of paradigm shift is the same as or very similar to the shift from pre-paradigm to paradigm. This assertion will be critical to the later analysis of educational reform efforts.

The process of paradigm shift can be broken into three phases: development of the new paradigm, paradigm debate, and new paradigm

acceptance (Kuhn, 1970). Of course, some new 'paradigms' will not proceed through all three stages; some will never even leave the mind of its innovator. Successful new paradigms, however, will proceed through all these stages described below.

Development of the New Paradigm: Several factors can lead to the development of a new paradigm. A new, successful theory within a field may be productively expanded into a full paradigm. Some form of 'crisis' can occur in the field which precipitates a new paradigm. Examples of this are wide and disparate and can even come from sources outside the field of study (Kuhn, 1957; Miller, 1987). The existence of a crisis in education is demonstrated by the many reform initiatives described earlier. Alternately and most typically, an anomaly is discovered in the process of research. The individual researcher takes note of a phenomenon inconsistent with the paradigm. This in itself is a large step because paradigms often have the effect of screening out such data before recognition is ever made. Even when recognized, anomalies are rarely seen as counter-instances to the existing paradigm. Instead, they are set aside as interesting but probably unproductive lines of research. If the anomaly continues to surface in many different observations and research areas, attempts will be made to 'amend' the existing paradigm to allow for the anomaly (Kuhn, 1970; Steiner, 1986).

Eventually, however, a new paradigm will be produced which attempts to explain the phenomena covered by and be consistent with the anomlies of the former paradigm. That a new paradigm is offered at all should not be

surprising since intensive effort is applied to anomalies which prove particularly bothersome. The innovator that produces this new paradigm will typically be either a new or young member of the field of study (Kuhn, 1970; Miller, 1987). Kuhn explains this observation by noting that members of the field with some longevity have too much invested in the old paradigm to even consider alternatives to it. In addition, paradigm formation is a process outside the typical work of scientists. The role of puzzle-solver is radically different from that of vista-builder. The researcher long in the field will have devoted his professional efforts almost exclusively to solving paradigmatic puzzles. The new or young member of the field, then, mentally creates this new paradigm and does so in a flash of insight, much like a Gestalt experience. Kuhn discusses paradigm creation further but the next step in the evolution of paradigms, paradigm debate, is more pertinent to the topics of education and educational reform.

Paradigm Debate: Even as the anomalies to a paradigm mount and the efforts to resolve the anomaly intensify, much of the scientific community involved will actively resist any new paradigms offered. While this may seem antithetical to the idea of science, resistance to paradigm change is necessary if a field is not to fly into a non-paradigmatic shamble.

Once a new paradigm has been offered in resolution of anomaly or some other crisis, an informal debate begins between the proponents of the traditional and proposed paradigms. Consistent with the scientific method, the

members of each camp attempt to support their view by paradigm testing through objective experimentation. But while this type of research does lead to persuasive conclusions during a time when one paradigm is universally accepted, it cannot do the same during paradigm debate. In fact, since paradigms are the very definers of a field of study, proponents of different paradigms cannot communicate with each other effectively enough to expect logical resolution. The different viewpoints are incommensurable because they speak to different problems, use different criteria, use similar terms and instruments in different ways, and "...practice their trade in different worlds" (Kuhn, 1970, p. 149; Steiner, 1986; Gregory, 1987).

While competing camps may not be able to convince each other, the crisis has thrown the entire scientific community into enough of a paradigm confusion that some arguments can be persuasive. These include explanations of the anomaly by the new paradigm, predictions of the new paradigm of previously unknown phenomena which then are found to exist, aesthetic elegance of the new paradigm, and some form of subconscious faith (Kuhn, 1970; Miller, 1987). To a certain extent, the key to the conversion of members of the community is a "Gestalt switch" (Kuhn, 1970, p. 204) in which the individual simply finds himself operating under the new paradigm. As the community converts through these arguments, the new paradigms holds sway (Kuhn, 1970).

Acceptance of the New Paradigm: Once the specific community has converted to the new paradigm for the reasons listed above and other reasons specific to

the individual, a major reconstruction of the field is undertaken. Law, theory, instrumentation, and methodology are all re-evaluated. So are previous findings and 'facts.' In so doing, the advantage of paradigm shift, that of a proliferation of new discoveries, occurs. Old research areas are discarded or relegated to other areas; others are approached in new ways. Whole new questions are now legitimate to investigate. One interesting example of this is the view of science before and after Kuhn inasmuch as Kuhn's paradigm of science and the history of science is in the process of replacing the old paradigm which is beyond the scope of this review.

The fact that Kuhn's paradigm has not yet replaced the old paradigm points out one last cruical feature of paradigm shift, its lengthy duration (Miller, 1987; Kuhn, 1970; Tuthill & Ashton, 1983). As was noted earlier, the young and novices in a field typically produce the new paradigms because they do not have the strength of vested interest. Additionally, some members of the field never do adopt the new paradigm. Well-established community members may actually have to die off before the paradigm can truly be held by a consensus of its members. (Kuhn, 1970) This point will be especially crucial for the design of this study. The demise of these individuals completes the process of paradigm shift. A fuller discussion of the signs of an oncoming paradigm shift or the establishment of a new paradigm appears in Chapter III due to its direct bearing on the methodology of this project.

Non-Subjectivity of Paradigms and Paradigm Shifts:

One of the major attacks against Kuhn's ideas is the assertion that by

claiming that paradigms affect the observations of scientist, scientists are 'converted' to new paradigms by faith and Gestalt switches, and that asserting that paradigms change, Kuhn has denied the objectivity of science and condemned it to undirected relativism (Gutting, 1980; Lakatos & Musgrave, 1970; Steiner, 1986; Wade, 1977; Prather, 1987; Barnes, 1982). While it is true that paradigms necessitate the abandonment of a purely objective view of science in which advancement comes in the form of uninterrupted progress, discovery building on discovery (Tuthill & Ashton, 1983), this does not necessarily plunge science into the pit of relativism. Even the most extreme logical positivist, in any case, does not claim such objectivity anymore.

But Kuhn (1970) finds a middle ground for his paradigms in a paradigm shift of the 19th Century.

> We are all deeply accustomed to seeing science as the one enterprise that draws constantly nearer to some goal set by nature in advance.
> But need there be any such goal? Can we not account for both science's existence and its success in terms of evolution from the community's state of knowledge at any given time? Does it really help to imagine that there is some one full, objective, true account of nature and that the proper measure of scientific achievement is the extent to which it brings us closer to that ultimate goal? If we can learn to substitute evolution-from-what-we-do-know for evolution-toward-what-we-wish-to-know, a number of vexing problems may vanish in the process.
>
> ... For many men the abolition of that teleological kind of evolution was the most significant and least palatable of Darwin's suggestions. The *Origin of Species* recognized no goal set either by God or nature. Instead, natural selection, operating in the given environment and with the actual organisms presently at hand, was responsible for the gradual but steady emergence of more elaborate, further articulated, and vastly more specialized organisms. (Kuhn, 1970, pp. 171-172)

Thus, a paradigm shift is not higher or lower. It is not cumulative. While a

new paradigm is seen as better by members of the community because it produces more discoveries, enables more puzzle solutions, and is even a better representation of nature, it should not be construed to be closer to some higher truth than any other paradigm. In fact, the success of a paradigm is quite literally its ability to convert the members of a community. Thus, paradigms are chosen because they are best available.

> Verification is like natural selection: it picks out the most viable among the actual alternatives in a particular historical situation. Whether that choice is the best that could have been made if still other alternatives had been available or if the data had been of another sort is not a question that can usefully be asked. There are no tools to employ in seeking answers to it. (Kuhn, 1970, p. 146)

Thus, the paradigm is chosen because it is the best available and a new paradigm is chosen because it is better than the alternative. Once the new paradigm is in place, natural selection of community members occurs as those not of the paradigm are removed.

> To say that the members of different groups may have different perceptions when confronted with the same stimuli is not to imply that they may have just any perceptions at all. In many environments a group that could not tell wolves from dogs could not endure. Nor would a group of nuclear physicists today survive as scientists if unable to recognize the tracks of Alpha particles and electrons. It is just because so very few ways of seeing will do that the ones that have withstood the tests of group use are worth transmitting. Equally, it is because they have been selected for their success over historic time that we must speak of the experience and knowledge of nature embedded in the stimulus-to-sensation route. (Kuhn, 1970, pp. 195-196)

To sum up, though Kuhn's ideas are not consistent with pure objectivity, they are also not consistent with relativism. Paradigm shifts are the process of movement away from primitive beginnings but not towards anything specific.

Relationship of Paradigms to Learning Communities:

One final discussion relating to the idea of paradigms is that of the scientific or learning community. As has been said earlier, a paradigm can be said to reign over a field of study when the entire community has accepted it. Thus, the pre-paradigmatic period ends when the entire community has accepted one paradigm. The older schools which typified the pre-paradigmatic period disappear, and those who refuse to abandon those schools are not pushed from the community but the community leaves them and thereafter ignores their work. Paradigm shifts occur as the community abandons an old paradigm and accepts a new one. Thus, the paradigm and the community which it serves are not conceptually divisible. Kuhn noted this when he stated, "A paradigm is what the members of a scientific community share, and, conversely, a scientific community consists of men (sic) who share a paradigm." (1970, p. 176) It is the identification of the paradigm with the learning community that makes a field of study a science and that makes a paradigm an almost unbreakable law. Only the community can decide questions about the paradigm, and only the community can change it. It is also for this reason that Kuhn stated quite clearly that studies of paradigms must involve the related learning community. "Any study of paradigm-directed or of paradigm-shattering research must begin by locating the responsible group or groups." (Kuhn, 1970, p. 180) The fact that paradigms and the learning communities which hold them are inseparable must have significant import for research on paradigms (Gutting, 1980).

A Final Definition of 'Paradigm':

One of the unfortunate results of the success of any written work is that it comes under terrific attack by detractors and even disciples. One could measure the success of a work by the number of condemnations of it. Many attacks have been made on SSR (Gutting, 1980; Lakatos & Musgrave, 1970; Steiner, 1986). The most common criticism of Kuhn's work is the diversity of definitions of paradigm. This problem was noted before and is a critical one because paradigm, as a term, is the fundamental concept of Kuhn's essay. In the postscript to the 1970 edition of SSR, Kuhn attempts to disentangle the definitional problem he has created. He does so by distilling the many definitions offered by Masterman into two potential definitions of paradigm.

> That procedure quickly discloses that in much of the book the term 'paradigm' is used in two different senses. On the one hand, it stands for the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community. One the other, it denotes one sort of element in that constellation, the concrete puzzle-solutions which, employed as models or examples, can replace explicit rules as a basis for the solution of the remaining puzzles of normal science. (Kuhn, 1970, p. 175)

Kuhn resolves the problem by nesting the second definition within the first. The first definition is no longer applied to paradigm but is instead applied to a phrase he offers called the disciplinary matrix. The second definition retains the term paradigm, also known as exemplar, and becomes one component of the disciplinary matrix (Kuhn, 1970; Steiner, 1986; Gibson, 1984; Wells & Picou, 1981). From the lengthy description of the disciplinary matrix that Kuhn offers in his postscript and from earlier definitions of paradigm which fit the new phrase, disciplinary matrix, the following components of the

disciplinary matrix can be enumerated:

1. Generalizations/Law: "...those expressions deployed without question or dissent by group members..." (p. 182)
2. Metaphysical Paradigms: Shared philosophical commitments to or beliefs in particular models which define acceptable and non-acceptable problems.
3. Values: Criteria placed upon applications which determine the acceptability of that particular application.
4. Exemplars: Classic examples of specific applications, in the case of education, of specific curriculum or instruction.

(Kuhn, 1970; Cortese, 1984; Martin, 1981)

The confusion results possibly because from the paradigm/exemplar can be derived the entire disciplinary matrix. From the point of one wishing to utilize Kuhn's ideas to analyze an existing field, it is possible to use either the disciplinary matrix or the paradigm/exemplar and to assume the characteristics of a paradigm in SSR will apply to either. Clearly the disciplinary matrix is more useful because it makes explicit each of the components of the overall philosophy of a field of study while the paradigm/exemplar provides them only implicitly. For the sake of clarity, both terms, paradigm and disciplinary matrix, will be hereafter used to mean the definition of disciplinary matrix given above.

Applicability of Kuhn's Disciplinary Matrix to the Field of Education:

Though the characteristics of the disciplinary matrix and a matrix shift

should now be clear, it is still not evident that any of this should apply outside the area of natural sciences. Kuhn is somewhat ambivilent on the issue.

> To one last reaction to this book, my answer must be of a different sort. A number of those who have taken pleasure from it have done so less because it illuminates science than because they read its main theses as applicable to many other fields as well. I see what they mean and would not like to discourage their attempts to extend the position, but their reaction has nevertheless puzzled me. To the extent that the book portrays scientific development as a succession of tradition-bound periods punctuated by non-cumulative breaks, its theses are undoubtably of wide applicability. But they should be, for they are borrowed from other fields. (Kuhn, 1970, p. 208)

Kuhn goes on to note many other similarities between science and other fields and only manages to suggest that there may be unique traits in science that reduce the applicability of his ideas. Existing research applications of Kuhn are not helpful because they rarely ever consider the issue of applicability of Kuhn to areas outside the natural sciences. (Wade, 1977; Fennell & Liveritte, 1979; Heinich, 1970) Thus, the question of the applicability of Kuhn's ideas to education is unanswered.

Nevertheless, there exist three separate lines of evidence that would lead to an acceptance of the validity of the application of the disciplinary matrix to the field of education. These lines of reasoning are: deductive reasoning, the logical potential for any field to move from pre-paradigmatic status to paradigmatic status, and previous research which has successfully applied Kuhn's ideas to fields akin to education.

Deductive Reasoning: By deductive reasoning is meant the process of deriving conclusions based on accepted assumptions. It can be concluded through deductive reasoning that paradigms, as Kuhn described them, must be

applicable to the field of education. Such a reasoning process can be pursued along three separate paths. The first deals with the assumption that paradigms are indeed applicable to natural sciences as Kuhn's book purports. This assumption, a limitation of this study, coupled with the fact that Kuhn borrowed much of his analysis from the social sciences (Kuhn, 1970; Steiner, 1986), implies that if ideas derived from the social sciences can be applied to the natural sciences, they can most certainly be applied back to the social sciences. Kuhn, himself, puts this argument best:

> To the extent that the book portrays scientific development as a succession of tradition-bound periods punctuated by non-cumulative breaks, its theses are undoubtedly of wide applicability. But they should be, for they are borrowed from other fields. Historians of literature, of music, of the arts, of political developments, and of many other human activities have long described their subjects in the same way. Periodization in terms of revolutionary breaks in style, taste, and institutional structure have been among their standard tools. (Kuhn, 1970, p. 208.)

A second path to the social sciences is a definitional one. Kuhn defines a science to be "any field in which progress is marked." (Kuhn, 1970, p. 162.) But this is not progress in any sort of utilitarian sense. It is progress in the sense of the solutions to questions allowed by the paradigm parameters. In the case of the paradigm, then, progress is a process conducted wholly within the confines of the professional circle. The paradigm defines appropriate questions and acceptable methodologies for the solutions to those questions. As such, once a paradigm exists, progress virtually must occur. (Kuhn, 1970) Thus, education is a candidate for Kuhn's applications if it is a science. A

syllogism ensues. If it can demonstrate progress, it is a science. If it has a paradigm, progress will invariably occur. If the community agrees to a disciplinary matrix, then a paradigm has been created. Community agreement is simply a matter of persuasion and conversion. Thus, if a large majority (consensus is not necessary since very small minorities can be simply defined out of the field (Kuhn, 1970) of the educational community can agree on a disciplinary matrix, Kuhn's ideas apply to education. Inasmuch as such agreement existed under Perennialism in Europe (Knight, 1940) and Progressivism in America (Ornstein & Levine, 1984), the possibility of a paradigm in education is assured. Kuhn's very definition of terms leads to the validity of applying his ideas to education.

A third deductive path is founded on the assumption that any field of study requires some form of 'organizing principle' to exist. The term is borrowed from Daniel Jordan (1979) who concludes that education is not a science because it lacks such a basic principle. Chaology, the science of chaos, has been recently popularized by James Gleick (1987) and is on the way toward demonstrating organizing principles for those phenomena historically thought to be random. If Gleick and/or the assumption that any field requires an organizing principle is correct, then education has some sort of organizing principle. Various authors have expressed dissatisfaction with the consensus of opinion on what that principle is or should be (Tuthill & Ashton, 1983; McInerny, 1989; Olsen, 1974) and bemoaned the lack of one, universal principle. Knowing nothing of Kuhn's history of science, it is

possible to derive from this point of lamentation that education is striving towards a paradigm. Once Kuhn's ideas of pre-paradigmatic schools and paradigm debate are added to this current lack of an organizing principle, the applicability of the paradigm to the potential organizing principle of education is assured.

A final deductive path arriving at the destination of the applicability of Kuhn's theses to social science assumes that similarity of development results in similarity of result. That argument, offered by Hart (1986), states that if a social science, psychology in Hart's case, developed in a similar manner as Kuhn's conception of science, then Kuhn's thesis applies to it. As stated earlier, Kuhn described sciences emerging from competing classical schools in a pre-paradigmatic field. That education has had and continues to have such a competition of theoretical schools (Bondra, 1980) will be discussed at length in the next section of the literature review. Since the field of education has had a similar development, through theoretical schools, to sciences proposed by Kuhn as paradigmatic, Kuhn's theses should apply to education. The importance of the paradigmatic schools in the pre-paradigmatic field of education is discussed more thoroughly below.

Shift from Pre-Paradigm to Paradigm: Kuhn makes four very clear points that bear directly on this argument. The first is that it is possible for social sciences to have paradigms (Cortese, 1984):

> It remains an open question what parts of social science have yet acquired such paradigms at all. History records that the road to a firm research consensus is extraordinarily arduous. (Kuhn, 1970, p. 15)

The second is that paradigms do exist in pre-paradigm schools.

> Whatever paradigms may be, they are possessed by any scientific community, including the schools of the so-called pre-paradigm period. (Kuhn, 1977, p. 294)

The third is that typically paradigms come out of the competition of the classical schools of a field.

> No wonder, then, that in the early stages of the development of any science different men confronting the same range of phenomena, but not usually all the same particular phenomena, describe and interpret them in different ways. What is surprising . . . is that such initial divergences should ever largely disappear.
>
> For they do disappear to a very considerable extent and then apparently once and for all. Furthermore, their disappearance is usually caused by the triumph of one of the pre-paradigm schools, which, because of its own characteristic beliefs and preconceptions, emphasized only some special part of the too sizable and inchoate pool of information. (Kuhn, 1970, p. 17.)

The fourth and final pertinent point from Kuhn is that the shift from the pre-paradigm status to the paradigm status is similar to the shift from one paradigm to another. This is a crucial point because it makes Kuhn's analysis of paradigm shift applicable to fields striving for an initial paradigm. Kuhn discusses this similarity several times in his essay:

> In this respect, research during crisis (paradigm shift) very much resembles research during the pre-paradigm period.... (Kuhn,1970, p. 84)

Education, as a field of study, must have one of two characteristics in order for Kuhn's idea to apply to it. It must either have a paradigm or have schools of thought competing to make their paradigm the paradigm for the entire field. Numerous authors are quite clear in their negation of the first possibility. Popkewitz, Tabachnick, and Zeichner (1979), and Phillips (1980)

and Glass (1976) make this point by demonstrating that educational research often has little relevance to practice, a characteristic of pre-paradigmatic fields (Kuhn, 1970). Bondra (1980) characterizes education as philosophical and pre-scientific, both non-paradigmatic descriptors. Burton (1978) states very explicitly, "Education is in a stage where no paradigm has been universally accepted." Since it lacks both scientifically coherent research and other characteristics of paradigmatic fields, education is clearly not paradigmatic.

But it is not necessary for a field of study to have achieved paradigmatic status; consensus on the fundamentals is not necessary for Kuhn to apply. (Morris, 1987) It must only have competing paradigmatic schools. This muster education can pass. Various authors provide a seemingly endless supply of such schools (Adler, 1982; Aronoff & Toloudis, 1987; Dewey, 1938; Greene, 1953), some popularly acknowledged and some fairly idiosynchratic. In the section on classical educational schools that follows some final arguments for the applicability of Kuhn to education, the existence of such schools and their ability to fulfill the components of a disciplinary matrix, outlined by Kuhn, will be demonstrated. Their existence validates the applicability of Kuhn to education.

Previous Research: While each of the above arguments has indicated that Kuhn can be applied to education, possibly the most persuasive piece of evidence is that of past research. Other authors have profitably applied Kuhn to education and related fields (Greenman, 1987; Hairston, 1982; Staff, 1985; Olasky, 1984)

Research that has applied Kuhn to areas outside of the natural sciences, but not including education, is relevant because it demonstrates that Kuhn's ideas have utility and applicability outside of the natural sciences. Since the only goal of discussing this research is to show that others have seen fit to use Kuhn's ideas, brief reviews are appropriate.

Numerous authors attest to the fact that many areas of study outside of the natural sciences have seen fit to utilize Kuhn (Gutting, 1980; Wade, 1977; Barnes, 1982; Lutz, 1988). Gutting's Kuhnian anthology alone includes chapters on sociology, economics, political theory, history, religion, and political science (1980). One reason for these wholesale adoptions of Kuhn is that Kuhn's ideas implicitly allow the social sciences and other fields of study to claim equal status to natural sciences. Whereas before, natural sciences were able to claim a unique ability to perceive objective reality, the notion of paradigmatic consensus being the criterion for a science destroys the exclusivity of the claim and allows other fields to crowd into the fields of science (Lutz, 1988; Gutting, 1980; Kuhn, 1970; Wade, 1977). Two of these authors, Gutting and Wade, imply that this reasoning behind adopting Kuhn was self-serving and thus invalid but their argument is basically ad hominem, attacking motivation rather than the validity of application. The validity of the applications should be reviewed on a case-by-case basis. A few examples, demonstrating particulars in a much broader and richer context, can be found below.

Norman Geschwind (1980) adopted Kuhn in his work on anthropology.

His basic tenet was that Kuhn's idea of paradigm shift could explain changes in American anthropology during the 19th and 20th Centuries. Steiner (1986) found far-reaching applications in the field of communication, both as explanation for changes in the discipline and utilitarian guides in its practice. The staff of the Journal of Communication (Staff, 1985) calls for reform of schools of journalism, based on what he sees as an invalid news reconstruction paradigm.

Psychology has seen an especially large adoption of Kuhn, possibly because Kuhn used a number of psychological principles in his essay. These applications have either identified paradigms and paradigm shifts in sub-disciplines within psychology or have noted the same within the entire discipline of psychology. Examples of the first include Cortese's (1984) declaration of the paradigmatic status of cognitive psychology, Rosnow's (1981) book, Paradigms in Transition: The Methodology of Social Inquiry, the thesis of which is that social psychology has had a paradigm and is currently embroiled in a paradigm shift, and Whitehouse's dissertation (1985) which identified Glasser's Control Theory as the new paradigm for social-personality psychology. But while individual sub-disciplines of psychology were being declared paradigmatic, others were utilizing Kuhn's paradigms to analyze the entire field. Buss (1978), in The Structure of Psychological Revolutions, notes that Kuhn's ideas have become especially relevant to psychology since the 1970 revision appeared. K.P. Hillner (1984) utilizes Kuhn in his text on the history and systems of psychology:

> The classical schools of experimental psychology are pre-paradigmatic in nature. They actively competed with each other with respect to object of study, methodology, orienting principles, and the like. The critical aspect of Kuhn's view of science relative to the systemic phase of modern psychological history is whether psychology has advanced beyond the preparadigmatic phase: Can any contemporary experimental system be regarded as a paradigm? There is no simple or clear-cut answer. A good case could be made for either a positive or negative resolution of the paradigm issue. (Hillner, 1984, p. 15)

Thus, psychology has utilized Kuhn's ideas to characterize sub-disciplines and the overall discipline.

The same has occurred, though to a lesser extent, in sociology. Khalifa (1981) and Barnes (1982), for example, discuss the impact Kuhn has had on the sociology of knowledge, a sociological perspective on metaphysics but an identifiable sub-discipline of sociology proper. Wells & Picou (1981), meanwhile, devote their book, American Sociology: Theoretical and Methodological Structure, to an analysis of the field of sociology in terms of Kuhnian paradigms. More will be said of this particular work later.

These applications so far have been limited to the mainstream social sciences. Kuhn's ideas have also found fertile soil elsewhere. Olasky (1984), in a paper presented to the Annual Meeting of the Association for Education in Journalism and Mass Communication, presented the view that the field of public relations was not only paradigmatic but that the current paradigm was in need of shift, implicitly offering his ideas as the core of a new paradigm. Stanton (1988) offers a similar analysis of urban and regional planning, explaining that, though the field may not currently have a paradigm, it is on the verge of one.

Both of these authors make their claims explicitly on a Kuhnian basis, analyze their fields from that standpoint, and derive practical implications in the process.

A final example is Barbour's (1974) work, Myths, Models, and Paradigms: A Comparative Study in Science. Barbour uses Kuhn and his impact on the nature of knowledge to analyze the potential for verification of religious truths. In the end, he concludes that religious paradigms exist, though perhaps not in exactly the same way that scientific paradigms do.

Anthropology, psychology, sociology, public relations, urban planning, and even religion are fields, among many others, to which the ideas of Thomas Kuhn have been applied. But this demonstrates only that numerous researchers outside of the natural sciences have seen fit to use the ideas found in SSR in their respective fields. A more persuasive case for the validity of applying Kuhn to education can be made by examining Kuhnian research in education itself.

Such applications have been wide and diverse (Gutting, 1980; Prather, 1987; Siegel, 1978; Oldham & Brouwer, 1984; Bowen, 1972; Smith, 1983). In terms of its purposes, educational applications are similar to applications in related fields. As the above studies demonstrate, applications of Kuhn either attempt to demonstrate the existence of a paradigm for a sub-discipline (Gutting, 1980; Siegel, 1978; Prather, 1987) or to make some sort of statment about the paradimatic status of the discipline as a whole (Hillner, 1984; Wells & Picou, 1981; Olasky, 1984). The same is true of education (Siegel, 1978; Hairston, 1982; Smith, 1983). For that reason, the initial discussion of the

research applications can be conveniently divided between those that deal with paradigm discussions of sub-disciplines and those that deal with the paradigmatic status of education as a whole. However, these applications are discussed, similarly to those discussed previously, only to demonstrate that Kuhn has been usefully and validly applied to education. Other references will be discussed later which represent precursors to the current research.

Numerous sub-discipline areas of education have utilized Kuhn. The most common example of this is in the area of science education (Gutting, 1980; Prather, 1987). Inasmuch as Kuhn's ideas had an emormous impact on the understanding of the nature of science, moving from a perception of a universally correct path toward truth to one of consensus-based, changing paths towards solutions to accepted puzzles, they also brought the instructional methods for teaching science under scrutiny. Kuhn accuses textbooks of masking the paradigm shifts that occurred in any field's past, thereby painting the picture of one seamless path towards scientific progress (Kuhn, 1970). Kuhn's view of science demands scientists with sharply hewn skills at critical thinking in order to solve difficult puzzles and to explore the boundaries of paradigms. Traditional science instruction due to the traditional positivist view of science, however, predominatly entails the learning of facts and physical laws (Siegel, 1978; Oldham & Brouwer, 1984). Numerous authors have then gone on to present science education mini-reforms in order to better fit the new view of science. Such mini-reforms have included the use of exemplars as the building block of instruction (Vitz, 1982), the discussion of

competing paradigms in a field as the foundation of true scientific thinking (Oldham & Brouwer, 1984), and the infusion of Kuhnian notions into every step of the science curriculum and instruction decision-making processes (Bowen, 1972; Boldt, 1969; Donnelly, 1979; Biggins & Henderson, 1978). The numerous recommendations for the revision of science education along Kuhnian lines clearly demonstrate the perceived applicability of SSR to this content area of education.

But, even though he has been most widely applied to science education, Kuhn has also found a home in a number of other educational areas. Practitioners in the field of composition have found Kuhn's ideas particularly relevant (Perdue, 1984). Young (1978)argues that composition has been guided by a Kuhnian paradigm since at least the beginning of the century. Smith (1983) agrees that paradigms apply but feels that a paradigm shift has occurred in the last 25 years. Hairston (1982), meanwhile, points to a current paradigm shift from " product-oriented to...process-oriented" composition. But the crucial part of this debate is not when a particular paradigm shift began. Instead, it is the fairly broad agreement among those in the field of composition, writing education, that their field of study is paradigmatic and that Kuhn's ideas very seriously apply to it.

The same is true for many other content areas. In the broader field of English, Raimes (1983) calls for an entire revamping (paradigm shift) of English as a content area in order to root out the positivist tradition in it, a tradition demonstrably invalid by the work of Thomas Kuhn. Bizzell (1979),

through an analysis of SSR, calls upon her colleagues to struggle towards a new paradigm in English which will clarify the role of language in paradigm debates and thereby demonstrate the significance of language in any controversy.

Siegel (1977), meanwhile, argues that the non-rationality of paradigm debate, as presented by Thomas Kuhn, makes the learning of critical thinking skills irrelevant. If critical thinking was not required in a paradigm shift, a situation which demands careful analysis of alternative models, Siegel could not see how it could have much relevance elsewhere. Fennell & Liverette (1979) agreed that Kuhn applied to the area of critical thinking skills, but that SSR demonstrated just the opposite, that critical thinking is vital to the final solution in any paradigm debate. If vital to that, it would surely be vital to other matters and thus deserved a place at the curricular table.

Kuhn has been offered as evidence in other content areas also. Chilcott (1987) argued that the idea of a paradigm could help the social studies deal with rapid change as it did for the sciences. Baker (1982) expressed the view that the governing paradigm in art education was that of the Romantic School. Orton (1988) utilized Kuhn to analyze different perspectives on issues in math education. In "Science and Learning Disabilities," Stanovich (1988) applies Kuhn to the search for a'metatheory' in special education. Aquirre (1981) offers bilingual education as the potential source, though still not actualized, of a new paradigm in education in general. Finally, Gottleib (1987) attempts to do a Kuhnian analysis of the field of development education, the

interdisciplinary study of the relationships between education and economic, social, and political change in lesser developed countries. Though all of these studies are quite different, they share the assumption that Thomas Kuhn and his ideas of paradigms can be validly applied to content areas in education. One application was offered by Martin (1981), albeit on a slightly different level. Martin maintained that Kuhn was constantly applicable to education in that paradigm shift in content areas made necessary revisions and paradigm shift in content curriculum.

But it is not only to the instructional content of education that Kuhn has been applied. To many authors, SSR has also spoken to issues in education per se. One example of such an issue is that of teacher status. Carbone (1982) noted that teachers had suffered significant losses of autonomy and, with it, status in the eyes of society and administrators. Though the study was written from a decidedly social reconstructionist or even Marxist slant, the key factor was simply that Carbone was attempting to derive the paradigm that had come to power which allowed or even caused this decline. Murray (1990) traced teacher status and autonomy in the Rochester City School District, describing paradigm shifts from 1900 to the present day. Murray notes three separate paradigms, ending with a paradigm shift of unknowable but promising destination.

Another educational issue to which the notion of Kuhnian paradigms has been profitably applied is educational research. The bulk of this literature is directed at the difficulties of solely quantitative research directed at

education (Erickson, 1986). Macmillan and Garrison (1984) speak to this point in "Using the 'New Philosophy of Science' in Criticizing Current Research Traditions in Education.' Specifically, the two authors attack the heavily quantitative process-product research and recommend new research paradigms which are more interpretive and qualitative. Howe and Eisenhart (1990), though never referring to Kuhn explicitly, map out the historical transition from quantitative to qualitative research. Quantitative research, which stemmed originally from the positivist school of the Vienna Circle, is on the decline in education while qualitative research (Howe & Eisenhart, 1990) non-positivist research which has its origin at least partially in the work of Thomas Kuhn, is on the ascendancy. In another vein, Troyna (1988) attacks what he perceives as the solidifying ethnic paradigm in educational research. Studies linking ethnicity to school failure or success are, according to Troyna, segregating society and harming the educational opportunities of specific ethnic groups, regardless of whether the findings are valid or not. Troyna demonstrates real understanding of the Kuhnian paradigm in that he uses non-rational argument to attack a research paradigm which is valid only from a non-positivist perspective. In demonstrating the need for a new research paradigm in education and attacking one specific educational paradigm, these authors lend credence to the idea that paradigms do have valid application to educational research.

One final perspective on educational research is offered by Burton (1978). Burton's view is that paradigms do apply to education but only

inasmuch as education will have paradigms in the future; she contends that it is currrently pre-paradigmatic. An educational paradigm, in the Kuhnian sense, is something to strive for, and research, as was the case in many of the historical case studies offered by Kuhn, is the instrument for its development. Because of the importance of research in the development of a paradigm, Burton offers a concept called 'exploratory research,' meaning research , the purpose of which is the development, rather than the testing, of hypotheses. This is very different than the the usual work of research which consists mainly of the search for solutions to puzzles offered by the presiding paradigm. Since no paradigm exists, exploratory research seeks out various hypotheses, which can then be discussed and cursorily researched. The final goal of exploratory research is to offer up a hypothesis which gains broad community consensus and becomes the paradigm. Burton goes on to critique educational research today as attempting paradigmatic puzzle-solving without a paradigm to offer up acceptable puzzles. She responds to her own critique with the suggestion for exploratory research to develop this paradigm. Similarly, Tuthill and Ashton (1983) recommend a procedure for the development of a paradigm in education and educational research.

To conclude, the literature cited above clearly demonstrates that Kuhnian paradigms and related notions have been widely and productively utilized in fields ranging from the social sciences, art, religion, science, and education. Numerous authors have adopted Kuhn for what his ideas can say to the field of education. His views have been used in the areas of instruction, content, and

educational research. A few other studies will be noted later as the focus of the paper is narrowed to the design for answering the question at hand.

Identification of Potential Educational Paradigms

Since it has been demonstrated that Kuhn can validly be applied to education it is possible to take the next step in determining the paradigmatic status of education in Iowa. That next step requires the identification of the potential candidates for a paradigm. Some researchers (Bondra, 1980; Murrell, 1979; Greenman, 1987; Oliver, 1976) have come to this point and then sought out a paradigm as of yet unknown in educational circles. Greenman (1987), for example, in American education: Emerging contexts for the future, literally develops a new paradigm and justifies it through its argued consistency with new studies in psychology. While these approaches are not necessarily flawed, they are not consistent with Kuhn's description of paradigm shift. Kuhn notes that paradigms occur in a formerly pre-paradigmatic field when one of the classical schools in that field gains pre-eminence over its competitors. Further, Kuhn contends that paradigms and classical schools can be identified because they are discussed in the textbooks of the respective field. Locating a consensus-based list of classical educational schools, then, is not difficult. Most educational textbooks which discuss educational foundations utilize the educational philosophy classification system developed by Theodore Brameld in his work, Toward a Reconstructed Philosophy of Education (1956), which includes four major classical schools of education.

These schools are perennialism, essentialism, progressivism, and social reconstructionism (Knight, 1982; Park, 1963; Knight, 1940; Johnson et al., 1973; Ornstein & Levine, 1984; Howick, 1980; Strain, 1978). Knowing that, it is necessary to describe each and to analyze each into the component parts of a Kuhnian paradigm (disciplinary matrix) in order to demonstrate their potential consistency with Kuhn's ideas.

The Classical American Educational Schools of Thought

In the United States, there have been four major schools of thought striving to become the educational paradigm . These are perennialism, essentialism, progressivism, and social reconstructionism. In order to determine which, if any, of these best represents the educational paradigm today, it is first necessary to review some of the basic tenets of the five historical educational schools of thought.

Perennialism:

From the rationalistic school of the Aristotelians came Perennialism. Its predecessors include such individuals as Aristotle, St. Thomas Aquinas, and the entire Scholastic school of philosophy. In Thomistic terminology, man is a rational animal and it is his potential for rational thought that distinguishes him from the beasts in the field. Aquinas was also the philosopher/theologian who brought together the teachings of Christ and Aristotle, of faith and reason. Each, he felt, were legitimate avenues for pursuing truth. And truth was

absolute; relativism was simply wrongheaded. The Perennialists applied this line of thought to education. As Mortimer Adler, classicalist and Perennialist (Witon, 1985; Huff, 1989), states, "The ultimate ends of education are the same for all men at all times and everywhere. They are absolute universal principles." (Adler, 1942, p.21) (Interestingly, acceptance of Perennialism requires the rejection of Kuhn's ideas though the acceptance of absolutism as a paradigm is not inconsistent with the idea of a paradigm.) William Benton, in a preface to one of Adler's books, comments on his association with Adler and Robert Hutchins in the Great Books movement:

> We forty learned---or, more accurately, relearned---that the central problems of life are always the same, whether in modern America or ancient Rome. They are the problems of Man---good and evil, love and hate, war and peace, happiness and duty, liberty and security. They are the same whether we humans meet them in an ox cart, a chariot, or a tomato-colored convertible. These are the problems the authors of the great books tackled--in science, history, philosophy, and literature. Theirs is the 'great conversation' of the ages, which never ends. (Adler, 1973, p. vi.)

If it is true that the purpose of education is to divine the absolute and immutable truths, then the curriculum should rarely, if ever, change. The discovery of truth at any time and any place will apply at all times and in all places. The logical source of educational materials then would be, as suggested by Adler's work, Great Ideas from the Great Books(1973), the classics or the great books. Hutchins, another of the great figures in Perennialism (Hart, 1989; Ediger, 1988), argues for such a course of study:

> Do not suppose, either, that because I have used as examples the great books of literature, philosophy, and the social sciences, I am ignoring

> natural science. The great works in natural science and the great experiments must be a part and an important part of general education. (Hutchins, 1952a, p. 21.)

Adler continued with this push in The Paideia Proposal, which suggest the same course of study for all (Adler, 1982).

The major principles of Perennialism, then, are the existence of universally applicable truths, the involvement of a search for truth in good education, the possibility of finding these truths in the great books, and the development of the intellect as a major goal of education (Ornstein & Levine, 1984). Perennialism is an absolutist, classical, and conservative education school.

Translated into the form of a disciplinary matrix, Perennialism is:

1. Generalizations/Law--The purpose of education is to divine or learn absolute and immutable truths.

2. Metaphysical Paradigms--Agreement with the philosophical idea of rationalism or that truth is absolute and discoverable.

3. Values--Truths which are included in the curriculum offering of Hutchins, Benton, Fadiman, and Adler, The Great Books of the Western World, (1952) (Ediger, 1988). While other areas could certainly be validly studied, they really have to have some serious attachment to the idea included in The Syntopicon (Hutchins,1952b) to these books.

4. Exemplars--The Paideia Proposal (Adler, 1982), one course of study for all which includes the great ideas.

Essentialism:

From the idealistic and realistic philosophical schools of Plato and Aristotle comes the educational school of Essentialism. Essentialism is actually somewhat similar to Perennialism, and its differences derive from its reaction to Progressive education. In a nutshell, Essentialists feel that the proper goal of education is to provide the student with the basic skills necessary for life and all of its varied opportuntities (Ediger, 1988). Theodore Greene states the Essentialist's cause quite succinctly:

> We can say that the goal of education is to prepare each individual, so far as his native endowment permits, to live well in his society and in the universe in which he finds himself; that that educational process is best which advances us most efficiently toward this goal; and that that academic community is best which best initiates and sustains this educational process . (Greene, 1953, p. 11)

Aside from the emphasis on basic skills, Essentialism also stresses hard work, discipline, and obedience to authority, normally represented by the teacher. One of Essentialism's major proponents, William Bagley, made this point clear when he asked the question:

> Should our public schools prepare boys and girls for adult responsibilities through systematic training in such subjects as reading, writing, arithmetic, history, and English, requiring mastery of such subjects, and when necessary, stressing discipline and obedience, with informal learning recognized but regarded as supplementary rather than central? (Knight, 1940, p. 407.)

The final subordinate clause in Bagley's comment points out again the fact that Essentialism was also partly a response to the Progressives under the leadership of John Dewey. Bagley makes this even clearer in the article, "The

Case for Essentialism in Education," which is devoted to a comparison of Essentialism and Progressivism and demonstrates the superiority of Essentialism (Bagley, 1941).

A more modern proponent of Essentialism is Sizer, author of Horace's Compromise (1984) and leader of the Essential Schools Movement. The current popularity of this movement demonstrates that the Essentialist school is far from dead. Sizer shows his Essentialist colors in one of his catch phrases 'less is more.' In practice, this means that students learn basic skills at their own rate, never progressing until the skill is completely mastered. Sizer feels this is appropriate because without these fundamental skills, a true and useful education cannot be provided (Sizer, 1984).

Another modern rebirth of the Essentialist movement is known as the 'back-to-basics' movement. As Bagley said, and as the back-to-basics movement would agree, informal learning is supplementary (Bagley, 1941). In summary, then, the Essentialists school espouses three positions, the cultivation of competencies in the basic skills, the inherent value of hard work and discipline, and the respect for legitimate authority (Johnson et al., 1973).

Essentialism in the form of a disciplinary matrix is described below:

Essentialism:

1. Generalizations/Law: The purpose of education is the development of competencies in the basic skills.

2. Metaphysical Paradigms: Agreement with the philosophical school of realism or that there exist fundamental skills which all students should master

and which are identifiable by educational authorities.

3. Values--Appropriate learning skills must be capable of being easily assessed and listed.

4. Exemplar--Reading skills as sequenced in commercial texts with workbooks for constant assessment (Jelinek, 1988). Individually Guided Math curricula.

Progressivism:

The philosophical underpinnings of the Progressive school of education date back at least to Rousseau and potentially much further. Progressivism essentially transfers the focal point of education from the content to be learned to the learner of the content. In the United States, Progressive education grew out of the Progressive Era in American politics (Ornstein & Levine, 1984). But when President Wilson suffered his stroke and the nation wearied of reformist movements after an exhausting world war, Warren Harding convinced the nation to 'return to normalcy.' Progressive politics died for the moment, but Progressive education did not. It lived on largely because of one man, John Dewey.

Dewey strongly felt that Progressive education was superior to Perennial or Essential thinking. He delineated the differences between Progressivism and the more traditional schools in his 1938 work, Experience and Education:

> from texts and teachers, learning through experience; to acquisition of isolated skills and techniques by drill, is opposed acquisition of them as means of attaining ends which make direct vital appeal; to preparation for a more or less remote future is opposed making the most of the opportunities of present life; to static aims and materials is opposed acquaintance with a changing world. (Dewey, 1938, p. 30)

Dewey's disciples were no less positive about Progressivism. Boyd Henry Bode, for example, expressed the view that Progressivism was child-centered and was driven by the ideals of interest, freedom, and learning by doing. Bode also commented on the fundamental ideas of Progressivism which made it 'progressive:'

> Lastly, it must undertake to point out how the acceptance of such a standard for growth and progress requires continuous and frequently extensive reconstruction or revision of traditional beliefs and attitudes, in accordance with growing insight and changing circumstances. In a word, Progressive education must become clearly conscious of the implications contained in its basic attitude and to use these implications as a vantage point from which to reorganize its thinking and its procedures. (Bode, 1938, p. 12)

Kirkpatrick was an unashamed trumpeter of Dewey's view, commenting even that he could find little in Dewey's ideas with which to disagree. Thus, like Dewey, he was solidly on the side of Progressivism, especially in comparison to the traditional schools:

> Should our schools make central the informal learning of experience and activity work, placing much less stress on formal, systematic assignments, discipline, and obedience, and instead seeking to develop pupil initiative, discipline, and responsibility as well as mastery of basic subjects, by encouraging pupils to show initiative and develop responsibility, with teachers, while in control, serving primarily as guides? (Knight, 1940, p. 407)

The traditional schools, in Kilpatrick's view, could not hope to provide the quality of education that the Progressives could.

In tying all of this together, it is necessary to summarize what Progressivism is and what it is not. The Progressive Education Association, born in 1919, attempted to make both of these stances clear. Progressive education was opposed to the Essentialist's authoritarian teacher, emphasis on bookwork, rote learning, the divorcing of education from society, and coercive discipline. Instead, they espoused the natural development of children, motivation for learning through interest, the teacher as learning facilitator, school-home cooperation, and educational experimentation for the derivation of educational reforms (Ornstein & Levine,1984).
The merit of education, then, depended on its usefulness and practicality. (Arap Lang 'at, 1988)

Progressivism, as a formalized movement, met its end in the 1950's but its legacy lives on. What is today called humanistic education, guidance services, and hands-on learning are all logical offspring of the Progressive school (Casement, 1990; Greenwood, 1988; Adams, 1973). Progressivism broken into the parts of the disciplinary matrix is found below:
Progressivism:

1. Generalizations/Law--Education is a naturally occurring process the purpose of which is produced by the learner.

2. Metaphysical Paradigms.--Agreement with the philosophical school of Pragmatism or that learning is learner-specific (Zida, 1988). Learning must

have real meaning to the learner if it is to be useful or integrated.

3. Values--That which is to be learned must have some demonstrable connection with a need or purpose in real life.

4. Exemplar--Vocational Education in the sense of any productive education which has a career orientation.

Social Reconstructionism:

Two divergent lines of thought led to the Social Reconstructionist school. The first was Progressivism, and thereby Pragmatism (Knight, 1982). This was in keeping with the Progressive Movement in that, like the Progressives who wanted to reform the evils in society, the Social Reconstructionists wished to reform society and education through educational reforms. A second line of thought that led to Social Reconstructionism was Marxism (Ornstein & Levine, 1984). Marxist theory maintains that the capitalists in society are exploiting the Proletariat. Education, the Marxists or Neo-Marxists feel, has been a tool for oppressing various groups in society. Public schooling has been an effective method of orienting the masses towards vocational, and therefore useful, careers (Carnoy, 1974). Since education has been used in such a manner, it is only fair to now use education as a tool for ridding society of such exploitation and other evils.

Social Reconstructionism, then, is open to a number of interpretations. The mild Reconstructionist would be more like a Progressive who wanted to use the school towards some social goal. Public schools in America frequently

do such things. The state standards in Iowa, for example, are an obvious attempt to reconstruct society towards several ends. The standards are working towards eliminating racism and sexism in society, producing more globally aware citizens, and wiping out the AIDS epidemic (New Standards for Iowa's Schools: Guidelines for Interpretation, 1988). A more extreme Social Reconstructionist would wish to push students toward an awareness of the political structure that exist around them, in and out of school, and to work in whatever way possible in the interests of the working class or whatever groups were being exploited (Carnoy, 1974).

Two of the founders of Social Reconstructionism in America were Counts and Brameld (Knight, 1940). Their writings represent classic Social Reconstructionism in American education. Counts was an educator reacting to the egocentrism and extreme individualism of Progressivism. He felt that the results of Progressive education would include superficial and self-serving citizens:

> ...(such people) have no deep and abiding loyalties, possess no convictions for which they would sacrifice overmuch, would find it hard to live without their customary material comforts, are rather insensitive to the accepted forms of social justice, are content to play the role of interested spectator in the drama of human history, refuse to see reality in its harsher and more disagreeable forms, rarely move outside of the pleasant circles of the class to which they belong, and in the day of severe trial will follow the lead of the most powerful and respectable forces in society and at the same time find good reasons for so doing. These people have shown themselves entirely incapable of dealing with any of the great crises of our time... (Counts, 1932, pp. 7-8)

To avoid such products of education, Counts felt that the teacher must

step in as the wisest change agent in society. He, therefore, felt that the public school teacher "should rather seek power and then strive to use that power fully and wisely and in the interests of the great masses of people." (Counts, 1932, p. 30.)

Brameld was not so hard on Progressivism. He felt it had served its purposes but that by the 1950's it was time to move on, and to move on specifically to Social Reconstructionism. He felt that the times had changed too much for any of the other educational schools to still be useful. His favorite example of this was the potential for nuclear war. With man having recently fought two world wars and now having the capability for full scale global destruction, an issue had arisen which could not have been foreseen by any past thinker or school of thought. Thus, something unique had been added to society with which education was not prepared to deal. The newness of such issues was not their only significance. The magnitude of their importance demanded efforts by all social institutions, especially education, to seek out a solution.

> For any educational system not to give these events priority, for it not to provide every possible opportunity to diagnose their causes and to consider how the growing generation may cope with them while time remains, is for that system to shirk its most urgent responsibility. (Brameld, 1959, pp. 18-20).

It is not quite so easy to sum up Social Reconstructionism as it was the previous schools. This is the case because there are a number of branches of Social Reconstructionism. These include the reformist approach, the Neo-Marxist approach, and the futurist approach (Knight, 1982). Futurism, being

the Social Reconstructionist attempt to solve predictable problems before they occur through the educational system, of course, has the predictable problem of poor predictability. Neo-Marxism and Marxism have not found much fertile ground in America and seem to be suffering similar treatment overseas today. Thus, the mainstream of Reconstructionist thinking in America is of the reformer branch. The basic tenets of such a program of education would be ones that cast a critical eye on one's own culture and history, investigate controversial issues, dedicate itself to positive social change, attempt to plan society towards good ends, and encourage students and teachers to participate in cultural renewal and all of its facets (Ornstein & Levine, 1984; Yoo, 1989). Social Reconstructionism in the form of a disciplinary matrix is described below:

Social Reconstructionism:

1. Generalizations/Laws: The purpose of education is to create positive social change and reform society.

2. Metaphyscial Paradigms: Pragmatism with a Marxist flavor. Truth is relative to what is best for the general well-being of society.

3. Values--That which is to be learned must be tied to some great societal good or goal.

4. Exemplar--Programs in global education, Multi-cultural/Non-Sexist Instruction and Curricula, Courses in controversial issues (Kanpol, 1989).

This section of the paper has accomplished two things. First, it has identified and described each of the four generally accepted candidates for

educational paradigms. This was necessary in order to determine the current paradigmatic status of practitioners in Iowa because it would be difficult to find the current paradigm without knowing the range of possibilities. Second, it has demonstrated that each of the classical schools of education can be stated in terms of a disciplinary matrix as defined by Kuhn in SSR (1970).

Before proceeding, however, it is first necessary to deal with three potential issues related to paradigms and this study's applications of them. These issues are the effability of paradigms, the paradigm candidates selected for this study, and the possibility of other candidates for an educational paradigm. Each of these issues is discussed briefly elsewhere in the paper but a more explicit reckoning with each is necessary.

The effability or 'voicability' of paradigms is an assumption which goes directly to the matter of instrumentation. Unless paradigms, these underlying philosophical constructs, can be made manifest through the research subject, they cannot validly be discovered. Thus, if paradigms are both efficacious and unknown to the subject, like Freud's construct of the subconscious mind, they may not be amenable to scientific means of discovery.

Four factors argue, however, against the problem of ineffability of paradigms. The first two indicate that an educational paradigm or paradigm candidate is voicable. The third argues that, even if the paradigm were not effable, it would be made manifest by this study's instrumentation if the paradigm had an effect on thought, belief, or behavior. The final factor simply

states that if the paradigm is not efficacious, then the entire question is asked in vain.

That paradigms are notions of which people are aware and about which they can discuss is made explicit by Kuhn in SSR:

> In this essay, 'normal science' means research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundations for its further practice. Today, such achievements are recounted, though seldom in their original form, by science textbooks, elementary and advanced. These textbooks expound the body of accepted theory, illustrate many or all of its successful applications, and compare these applications with exemplary observation and experiments....
>
> Achievements that share these two characteristics I shall henceforth refer to as 'paradigms,'.... (Kuhn, 1970, p. 10)

Notice that Kuhn states that paradigms are typically found in textbooks, along with their applications and importance. The average practitioner would likely have been repeatedly exposed to the paradigm and unavoidably exposed to its influences in the field.

Further evidence of this is found in the foundation texts listed in the bibliography. Howick (1980), Johnson et al. (1973), Knight (1940), Knight (1982), Ornstein and Levine (1984), Park (1963), and Strain (1978) all discuss educational paradigms at length. There is nothing spiritually (as in the name of God in traditional Judaism or the nature of the transubstantiation among Roman Catholics) or organically (as in Freud's notion of the subconscious) ineffable about these. They are quite explicable constructs open and reviewable by all knowledgeable of the rudiments of educational theory.

Even if an educational paradigm were not easily made manifest in a subject, the instrumentaion used in this study would cause the paradigm choice, if paradigms do influence thought, belief, or behavior, to be made clear. The EII instrument, to be discussed later, does not assume that the subject is aware of the name attached to their system of educational belief. Instead, it includes questions, the answers to which are consistent with one of the paradigm candidates. This enables the researcher to reach conclusions on paradigm commitment of each subject even if the subject is unaware of that commitment by nomenclature. In addition, the semi-structured interview contained in Appendix B accomplishes the same task, though with questions that are more experientially or behaviorally based.

It is finally possible, however, that the paradigm is still not discernible through these means because it has no effect on belief, thought, or action. If this were the case, the search for an educational paradigm would be pointless. Additionally, it would, by definition, not be a paradigm because a paradigm is a model of action or practice. This would indicate that Kuhn was incorrect about the existence of paradigms and paradigm candidates. At its base, this study is predicated on the ideas of Thomas Kuhn on paradigms. This fact is made more evident in the section on limitations and delimitations, in Chapter III, in which the assumption of Kuhn's ideas is limited as a delimitation of the study.

Having clarified the effability of paradigms, it is next necessary to explain the choice of the four paradigm candidates of perennialism, essentialism, progressivism, and social reconstructionism. This has, in fact, already been

explained. Kuhn (1970) states that paradigm acceptance usually occurs when one of the classical schools in a field gains acceptance by the members of the field. He also states that these schools can be found in foundations and other textbooks. That being the most likely method of locating the paradigm candidates, as stated by the developer of the notion of a scientific paradigm, an educational textbook review was conducted and the four candidates were the result.

This is not meant to exclude the possibility of other paradigm candidates. The list of *possible* candidates is seemingly without end. This research has looked at the four most probable candidates and with some success inasmuch as one school was found to have a great majority of the subjects as adherents. Nevertheless, it is still possible that some other entirely unique candidate or some hybrid candidate would have unanimous adherence. If so, this study is one step in the direction of locating it. In fact, one excellent method of proceeding towards its possible identification, if it exists, is listed as recommendation 1 in Chapter V. Having begun at the point of conceptual origination, it is now possible to point out that next step towards paradigm identification.

Before a subsequent step can be taken, however, it is first necessary to make the initial one of attempting to locate an educational paradigm among the classical schools. All that remains to do that is to review studies in this area which have pointed to one or more productive means of determining the paradigmatic status and reform potential of educational practitioners in Iowa.

Analysis of Studies Related to this Research

The selection of studies having direct bearing on this research program is not a simple task because it can be said flatly that there are no studies specifically analyzing the paradigmatic status and reform potential of educational practitioners in Iowa. However, the foundation of research can come from a number of different areas and the foundation for this research is found instead in previous studies which have attempted to locate the paradigm in a field of study, most usefully, education. Rarely, however, did these research studies specify paradigms as their target. Instead, they purported to search for the philosophies of various groups of people. What emerges from the literature, then, is one line of research directed toward paradigms and one line of research directed at a discussion of the educational belief systems of various educational stakeholders. These two lines converge in a study on nursing education by Wagner (1986) as will be seen below.

Paradigms-oriented Research: Six studies have relevance here. All six have their purpose statement in common. Each attempts to locate a paradigm for their field of study. Five of the six deal with some area of education; Wells and Picou (1981), on the other hand, attempt to demonstrate the paradigm of sociology. It is also the case that five of the six attempt to identify those paradigms without recourse to the membership of the field of study in question, an unlikely task from a Kuhnian perspective. Wagner (1986), uniquely, looks

towards the perceptions of community members as the best method of locating the paradigm. This review will begin with Wells and Picou's study on sociology and end with Wagner's.

In their book, American Sociology (1981), Wells and Picou add their voices to the "ever increasing group of scholars" (p. 37) attempting to apply the work of Kuhn to their field of study, sociology. The purpose of their research is to identify the paradigm for sociology in America. Their proposed methodology for making this identification is the analysis of themes and methodologies of published sociological research. This methodology is a valid application of Kuhn's ideas because community viewpoints are expressed in research and publications. Kuhn makes this point very clear in SSR, leaving room for content analysis as a valid means for identifying paradigms. Wells and Picou make the odd claim, however, that sociology has a 'partial paradigm' (1981). A partial paradigm, according to the authors, is a paradigm for a social science which need not pass the same degree of muster as does a paradigm for a natural science. In order to justify their diversion from Kuhn's works, they claim that while their views are not consistent with a 'pure interpretation' of Kuhn, they are consistent with a 'flexible interpretation'. This abandonment of Kuhn's explicit view of some fields of study as pre -paradigmatic seems unnecessary but does not really change the validity of the research method. What can be garnered from this study, then, is that major research projects have been launched for the identification of paradigms in the social sciences and that content analysis of the formal publications of that field

is one potential methodology for making that identification.

Two educational studies (Burton, 1978 ; Tuthill & Ashton, 1983) have been directed not at identifying the existing educational paradigm but, instead, at alerting the educational community to possible ways of developing such a paradigm. Paradigms, according to Kuhn, make possible tremendous progress in a field of study. Thus, it is not surprising that educational researchers would want to develop a method by which such a paradigm could be created. In her paper, "Assessment as Exploratory Research: A Theoretical Overview," Nancy Burton (1978) outlines the method by which she has been working towards the development of that Kuhnian paradigm. She begins by clarifying the status of education as pre-paradigmatic and points to the confusion and multiple directions of educational research as an inherent result of this. Education, in her view, is being studied through the tools of paradigmatic fields of study which are simply invalid when applied to fields without a paradigm. Burton describes three types of normal research in education as: 1)ordinary research--research centered on certain educational concepts but which have no firm, consensus-based definition; 2)social problems research--research on social problems which influence education, a type of research fraught with far too many independent variables to ever produce useful findings; and 3)mono-method research--research which uses one specific design or statistic, a foundation which is simply invalid. None of these three types of research, for the reasons listed above, have any hope of systematically producing scientific progress. Instead of proceding with this

type of research, Burton offers the alternative of exploratory research. This type of research analyzes educational data collected for other reasons and searches for useful conclusions from it. As massive analyses are conducted, certain conclusions will emerge and these conclusions will become the basis for an educational paradigm (Burton, 1978).

While Burton makes a number of conclusions which are defensible from a Kuhnian standpoint, her general purpose goes beyond the limits of applicability of Kuhn's ideas. As Gutting made very clear in his omnibus of Kuhnian literature, it is "clear that Kuhn offers no direction for generating such (paradigmatic) consensus." (1980, p. 14) While it is possible to say that a field is paradigmatic and even to make some judgements about the paradigmatic status of a field in terms of being partially of one camp and partially of another, it is not possible to make Kuhn prescribe methods for synthesizing the two camps or destroying one camp.

Tuthill and Ashton (1983) attempt a feat similar to Burton. They seek to develop an educational paradigm so that real educational progress can finally occur. Like Burton, they blame the ineffectiveness of educational research on the lack of a paradigm. Their solution, however, is not exploratory research but returns to Kuhn's ideas of community membership. They advocate going right to the heart of the matter by "resolving paradigmatic disputes through the democratic method" (Ashton & Tuthill, 1983, p. 11). Exactly how this democratic process would occur is unclear though the authors are quite definite in how it would not work: "By suggesting that the field of education

democratically resolve its paradigmatic disputes, we don't mean to imply that a blueribbon committee of scientists and practitioners should sit down and vote to determine how the rest of us should think and feel" (Tuthill & Ashton, 1983, p. 12). The problem inherent in this view, however, is that it is difficult to conceptualize just how a democratic process would work. If a vote is not taken at some point, then no democratic mechanism for the creation of the paradigm exists. But if a vote is taken, consensus must be created afterward. Certainly educators do not wish to have consensus mandated and without it, there can currently be no consensus. The real mechanism for paradigm creation, as Kuhn describes in his section on paradigm shift, is persuasion. Those who feel they have the better or best paradigm must convince the rest of their community. Discussions by Burton (1978) and Tuthill & Ashton (1983) of artificial means of gaining that consensus are simply wrongheaded from a Kuhnian standpoint.

A better approach to educational paradigms is offered by Murrell (1979), Bondra (1980), and Greenman (1987). Each of these researchers attempted to identify the educational paradigm with the use of some ideology or pattern of recent thought external to traditional education concepts. Murrell (1979) adopted previous work in paradigms to suggest that the focus of education should be on teaching people how to communicate between paradigms:

> The expanded concept of communication is based on the fact that if communication is to take place between individuals in a heterogeneous and pluralistic world, then monopolarized communication based on the exaltation of one paradigmatic perspective

> must be expanded to include the possibilities for many different cultural and intellectual paradigmatic perspectives. (Murrell, 1979, p. 298)

Murrell uses a content analysis of Maruyama's work to explain how this vision of inter-paradigmatic communications necessarily becomes the educational paradigm. The initial difficulty with this view is that Maruyama's views expand paradigms to include any and all bodies of thought, a potentially invalid use of Kuhnian paradigms.

Bondra in his study, The ANISA Model: A Scientific Paradigm for Education and its Implications for a Theory of Evaluation (1980), adheres more closely to Kuhn's original ideas. He promises that he will present a paradigm for education that includes "...disciplinary matrix, distinctive methods, body of theory, accumulating bodies of data, and implications for practical use." (Bondra, 1980, p. vi.) In chapters III-VIII, in fact, Bondra demonstrates how the ANISA model, a 'scientific' theory which uses an organismic approach to explanation and understanding, fulfills each of the points of the disciplinary matrix and how it can take education through the process of adopting itself as a paradigm:

> The ANISA model is viewed within Kuhn's structure of the growth of science. Illustrations from the growth of the mature physcial sciences were presented demonstrating the following process of growth: presupposition, exemplars, normal science, puzzle-solving, anomalies, extraordinary science, and paradigm shift. ANISA, when compared to these processes, fulfills Kuhn's criteria for a scientific paradigm. (Bondra, 1980, p. 77)

Having demonstrated that ANISA fulfills each of the Kuhn's criteria for being a potential paradigm, Bondra next argues for it being the educational

paradigm. Unfortunately, the entirety of this argument is definitional.

> The basic presupposition of ANISA is its first principle--the bedrock statement of the nature of reality. Change is the universal constant. The becoming state is constrained in the beginning state; therefore, change presupposed potentiality. The legitimate question to be asked about such an entity as potentiality is how it is released into actuality. (Bondra, 1980, p. 79)

Upon citing references in other fields which agree with his view that the universal principle is change, Bondra concludes that, therefore, it must be the universal principle in education also (1980). Two problems immediately emerge. First, it is not evident that this change principle has been universally accepted in other fields as the bedrock principle. Second, even if it has, Kuhn is quite clear in stating that, while other fields can surely influence a particular field of study, their role as causal agents is hardly definite. Bondra's research method is essentially an analysis of what he feels are the the new trends in some of the social sciences. Viewing these as agreeing with an 'organic' view of reality and therefore consistent with ANISA, he declares ANISA as the new educational paradigm. How this will occur is questionable.

A final offering of a new educational paradigm almost entirely as a result of ideas external to education is made by Greenman (1987) in her study, American Education: Emerging Contexts for a Model of the Future (1987). Greenman states her purpose as:

> The purpose of this dissertation is to articulate the emerging socio-cultural, philosophical, and human contexts in America as evidence of a new paradigmatic context for educational change and to articulate a model for education which is consistent with the resultant new paradigm. (Greenman, 1987, p. 1)

Greenman, from an analysis of changing milieu of American life, is going to present the educational paradigm which must emerge. The content analysis produced the following conclusion:

> Review of emerging scientific paradigms, then, provides a supportive context for change.
>
> The principles of integration, interconnection, process, and unbroken wholeness are the basis of the emerging paradigms and the key to a coherent philosophical context for education. (Greenman, 1987, p. 2)

Because of the new scientific paradigm, education must then abandon its linear, unchanging, reductionist viewpoints and instead garner a paradigm which is consistent with change and wholeness as the universal principle. The critiques applied above to Bondra's study apply here also because the aim of the study is the same. Interestingly, Bondra and Greenman begin with the same premises but conclude with different educational paradigms.

It is this very result that evidences the fallacy in all three of these studies. They propose to identify the new educational paradigm solely from influences and trends outside of education. They suggest a radical break from education's past without giving support for their arguments from education's past or present. Certainly radical breaks from the past occur but they are hardly, in a Kuhnian sense, predictable. In Kuhn's perspective of paradigm shift, anomalies occur and paradigms slowly emerge and grow out of them. Paradigms do not spring from the head of Zeus.

But the fact that this research base includes studies which propose goals which are not Kuhnian and offers paradigms without proper basis in education

proper does not destroy its worth. What is being attempted is the appliation of Kuhn to education. What is being missed is the search for the educational paradigm in a fashion consistent with the ideas expressed in SSR (1970). Those endeavors do exist, however (Wiley, 1972; McAtee & Punch, 1977; Herring, 1990). They are present in numerous studies which seek to determine the philosophical status of members of the educational community. A review of these studies follows.

Philosophical Viewpoints-Oriented Research: Relevant studies of this sort will be divided into two groups based on the purpose of the research. Generally the purpose consists of determining the philosophical viewpoints of teachers or administrators. In addition to the purpose of the research, the type of data collection instruments used in the studies is also important. Some studies used inventories that had been previously validated in the literature (Wiley, 1972; McAtee & Punch, 1977;). Others used inventories specifically created for that study and purpose (Wagner, 1986; Ang, 1984). Still others used a combination of both (Brown, 1974; Narita, 1983). Some mention will also be made of the specific instruments used.

The first category, then is those studies which attempt to determine the philosophical viewpoint of student-teachers. Wiley's study, Determining Tendencies of College Faculty, Student Teachers, and Cooperating Teachers Toward Traditionalism or Progressivism in their Attitudes Regarding Education, (1972) was an attempt to confirm the suspicion that new teachers left college as progressivists and were transformed into traditionalists by cooperating

teachers in the field. The author adminstered the Kerlinger Education Scales VI and VII, research-validated instruments which differentiate between traditional and progressive views, to test the philosophical attitudes of all three groups.

McAtee and Punch (1977), interested in the rapid change in Australian education, also used the Kerlinger Scales in their study, Progressivism and Traditionalism in Teacher's Attitudes towards Education . They went on to tie some of the philosophies detected to teacher backgounds. In a study entitled, Relationships Between Progressivism, Traditionalism, Dogmatism, and Philosophical Consistency in Science, English and Elementary School Teachers , Brown (1974) investigated the relationships of educational attitudes, personal philosophies, and closed or open belief systems. The results, the author felt, would improve the success of student teaching experiences through better assignment of students with cooperating teachers of similar viewpoints. Brown used the Kerlinger Education Scale of known validity and reliability and the Rokeach Dogmatism Scale and Hug Philosophical Consistency Test of unreported validity and reliability.

At the college level, John Starky and Rita Baar (1972) compared the philosophical beliefs of novice teachers currently enrolled in undergraduate and graduate course. The study, The Philosophical Nature of Teachers--Graduate and Undergraduate, also differentiated between elementary and secondary teachers. The instrument given to the teachers was the Ames Philosophical Belief Inventory, a validated test which categorizes responses

into the philosophical systems of realism, idealism, pragmatism, existentialism, and phenomenology. Phenomenology, existentialism, and progressivism were the beliefs of choice with realism and idealism nearly non-existent.

Two studies(O'Gorman, 1981; Carson, 1985) were done in the 1980's on the philosophies of adult educators. O'Gorman's (1981) study attempted to correlate philosophical position with student retention rates. The study, Philosophical and Educational Orientations of Adult Basic Education Teachers, utilized the Ross Philosophical Educational Inventory, a validated instrument which categorizes responses into the positions of idealism, realism, pragmatism, and existentialism, the Educational Orientation Questionnairre, a similarly validated instrument, and the Personal Data Profile, developed specifically for this study. O'Gorman was able to conclude, as a result of the data collected, that correlations did exist between teacher viewpoints and student retention rates. A second study on adult education was conducted by Gloria Carson which attempted to link specific beliefs about adult education to background factors. Carson used the Philosophy of Adult Education Inventory, an instrument validated on some adult educators, and concluded that a significant correlation existed between belief systems and some background factors.

One final investigation of philosophical orientations of teachers was An Investigation of a Relationship Between Educational Philosophies and Attitudes Towards Computer-Managed and Computer-Assisted Instruction in Secondary Regular and Special Education Teachers by Narita (1983). The

purpose of this study was to determine which teachers, in terms of their philosophies, could be expected to accept and utilize computer- assisted instruction. Instruments used included the Attitudes Toward Computer Scale, devised for the study, validation not reported, and the Kerlinger Education Scale VII (Kerlinger & Kaya, 1959). The findings were that progressive teachers were much more likely to utilize computer-assisted instrument than were traditional teachers.

The second category of studies investigating philosophical viewpoints includes those that attempt to determine the beliefs of administrators. Mark Herring (1990) conducted a study of this nature on the four individuals who have served as national Secretary of Education in order to understand the influence of that national office on American education. Herring conducted content analyses on the speeches and other communications of each individual, rated them according to the the philosophical categories of realism, idealism, pragmatism, and existentialism and compared their philosophical category with their actions as secretary. He found that the education secretaries acted quite consistently with their belief systems but, in the end, called for an end to the office because of the potential for federal regulation of education (Herring, 1990).

Two investigations into philosophical beliefs were conducted on college administrators. Miller (1983) in his study, Perceptions of Educational Philosophy at El Camino College compared the educational philosophy of each dean at El Camino College as expressed by the dean himself and as

expressed by the faculty under his supervision. The instrument used on both groups was the Ross Educational Philosophical Inventory. For some specific deans, significant differences in perceived philosophy were noted. Helen Ang (1984) conducted a study comparing the leadership styles and educational philosophy of administrators of religious colleges. The relevant instrument used was the Educational Philosophy Profile, developed specifically for this study and validity was not reported. No significant connections were found between leadership styles and educational philosophy.

Many more studies (Reams, 1980; Peterman, 1985; Fuller, 1984) were done on the philosophical beliefs of adminstrators at the elementary and secondary level. One such study, The Relationships Between Educational Managers' Leadership Styles and Educational Philosophies (Reams, 1980) was very similar to Ang's research. Reams investigated the possible connection between leadership style and educational philosophy of a number of California public school adminstrators pursuing their doctorate at the University of La Verne. Reams surveyed 102 of these administrators using the Ross Educational Philosophical Inventory. His conclusions were similar to Ang's: no significant relationship exists between leadership style and educational philosophy. Dumas (1981) did basically the same study in Louisiana in An Investigation of the Relationship Between Leadership Style and Philosophical Orientation of Elementary and SecondarySchool Principals. Using the Ross Educational Philosophical Inventory, she examined principals' philosophies and compared them to leadership styles. Like her two

4. The community members should be surveyed with a validated instrument, if possible, but only if such an instrument exists that actually tests what the study professes. If an instrument does not exist, it is better to proceed with a new instrument that has at least face validity

This study is consistent with each of the guidelines derived from previous research. In addition, it is an expansion on prior research. First, it included a survey of the educational philosophies of Iowa educators, something not done systematically in the recent past. Second, More important, through it, educators were questioned specifically on their educational viewpoints which are consistent with a potential educational paradigm. Many of the studies above (Narita, 1983; Miller, 1983; Reams, 1980; Dumas, 1981; Fuller, 1984) used the Ross Educational Philosophical Inventory (Ross, 1969) and the Kerlinger Education Scales (Kerlinger & Kaya, 1959) as direct tests of educational views. But neither of these instruments was sufficient for the purposes of the this investigation. The Ross instrument actually tests the respondent's consistency with philosophical viewpoints wholly detached from education. Its categories, idealism, realism, pragmatism, and existentialism, are whole philosophies of life, subsuming all areas of thought and including education as one small subset. Bell and Miller (1979), in their study, Congruence Between Educational Attitudes and Academic Philosophies, tested whether or not it could be assumed that a person who subscribed to a particular philosophy would also necessarily subscribe to its coordinate

sought to determine whether or not a Kuhnian 'metaparadigm', another term for paradigm, existed within nursing education. Wagner selected 229 directors of nursing education programs and surveyed them as to their paradigmatic view of nursing as a field of study. From established views of nursing found in the literature, Wagner constructed an instrument called the Metaparadigm Scale which queried her subjects on the importance, measured on a Likert Scale, of 78 concepts to nursing education. After conducting a pilot study on the instrument, she adminstered it to 160 of the chosen directors. Statistical analysis of the data was conducted by finding the mean agreement scores on each of the 78 concepts and by computing the percentage of respondents that held each of the 5 possible opinions (strongly agree, agree, uncertain, disagree, and strongly disagree) on each concept. This was followed by interpretive analysis of the meaning of these means and percentages for the nursing 'metaparadigm.'

The major weakness of this study is the investigation's failure to establish validity of the instrument. The fact that an alternative did not exist, however, made this unavoidable. The study also had a number of major strengths. It was largely consistent with the model of paradigm construction offered by Kuhn. Having acknowledged that nursing education did not currently have a perceived paradigm, she proposed to investigate the paradigmatic status of the field. Knowing that paradigms, according to Kuhn, are a matter of group consensus, she surveyed an appropriate population. Her study could have been improved if, instead of testing perceptions of concepts, she had tested

perceptions of currently existing schools of nursing education thought. The approach that attempts to build a paradigm without the use of existing schools of thought seems to take a harder road than Kuhn demands. A final strength of Wagner's study is the data analysis which is almost wholly descriptive. The purpose of the study and the data collected for that purpose do not lend themselves to quantitative analysis. Therefore, Wagner goes no farther than the computations of means and percentages because that is all the farther statistical analysis can genuinely take her study. Beyond that, interpretation of the results from a paradigmatic perspecitve is most appropriate.

Conclusions from Pertinent Research

The last section of the literature review has revealed two lines of research, paradigm-oreinted and philosophical survey-oriented, which merge with a study of nursing education. The previous research, beyond creating a conceptual background, provided a the following guidelines for this dissertation:

1. A search for paradigms should begin with the pre-existing classical schools of the particular field of study.
2. A paradigm, being the consensus opinion of a community, can best be discovered by collecting the perceptions of the members of that community.
3. Data analysis of the information collected should be relevant to the task at hand. Quantitative analysis should be used to clarify the amassed perceptions but interpretive qualitative analysis should be used to discover what these perceptions mean.

4. The community members should be surveyed with a validated instrument, if possible, but only if such an instrument exists that actually tests what the study professes. If an instrument does not exist, it is better to proceed with a new instrument that has at least face validity

This study is consistent with each of the guidelines derived from previous research. In addition, it is an expansion on prior research. First, it included a survey of the educational philosophies of Iowa educators, something not done systematically in the recent past. Second, More important, through it, educators were questioned specifically on their educational viewpoints which are consistent with a potential educational paradigm. Many of the studies above (Narita, 1983; Miller, 1983; Reams, 1980; Dumas, 1981; Fuller, 1984) used the Ross Educational Philosophical Inventory (Ross, 1969) and the Kerlinger Education Scales (Kerlinger & Kaya, 1959) as direct tests of educational views. But neither of these instruments was sufficient for the purposes of the this investigation. The Ross instrument actually tests the respondent's consistency with philosophical viewpoints wholly detached from education. Its categories, idealism, realism, pragmatism, and existentialism, are whole philosophies of life, subsuming all areas of thought and including education as one small subset. Bell and Miller (1979), in their study, Congruence Between Educational Attitudes and Academic Philosophies, tested whether or not it could be assumed that a person who subscribed to a particular philosophy would also necessarily subscribe to its coordinate

educational philosophy. Their findings were mixed with some moderate and some low correlations. What can be derived from this, however, is that it is not enough to know the overall philosophy of an educator in order to know their educational philosophy. The Kerlinger Education Scales, while remarkable in their numerous validation studies, are fairly blunt instruments. They can differentiate only between traditional and progressive (better defined as liberal than progressive in the sense of Deweyian Progressivism). As such, they are wholly inadequate for determining the overall educational philosophies of individuals beyond sorting them into two categories. Therefore, this study instead used instruments, some validated in other research and others created specifically for this investigation, which better observed the educational philosophies of educators. It did this through the use of the Educational Ideologies Inventory, developed by William F. O'Neill (1981).

Third, it utilized personal interviews for that final survey of agreement with Iowa reform initiatives. As Borg and Gall (1989) note, the personal interview has the advantage of gaining more and clearer responses from subjects. Since these newest initiatives have had little or no research done on them, the need for this additional information was evident. In the present study, each of these three improvements, surveying Iowa educational practitioners on their educational philsophies, focusing on educational ideology rather than general philosophy, and using personal interviews for the gathering of information, was made.

Chapter III

DESIGN OF THE STUDY

Defining the Population

As stated in the rationale, the goal of this study was to determine the current philosophical status and reform potential of educational practitioners in Iowa. This raised three questions of population. First, why choose Iowa as the population area to be explored? Second, which educational practitioners should be included? Third, of that group of educational practitioners, what characteristics should those individuals have in order to be selected for inclusion in the study?

The answer to the first question has been alluded to in the third purpose statement in Chapter 1. Iowa's educational system is noted for its excellence. It typically ranks first or second among the American states and territories in such things as ACT tests, SAT tests, and graduation rates. (Staff, 1990b;Business and Education Roundtable, 1990) It has the highest literacy rate in the entire country (Excellence in Education Task Force, 1984) but, interestingly, this has not made Iowa educators resistant to reform, as might be expected. Instead, as evidenced in the FINE Report (Excellence in Education Task Force, 1984), the Iowa educational community has had a tradition of pointing out weaknesses and creating institutional reforms in an attempt to remedy them. That this tradition has been carried forward to the present day is made manifest in the three current reform proposals previously described in the report of this study

Even though Iowa is 'in the lead' educationally, it has continuously sought to reform its system in an attempt to improve it. Because of this, Iowa is a highly relevant point of focus for a study of this sort. What philosophical viewpoints do the educators in this state hold that are in some way influencing this successful system of education? How do those viewpoints influence the tendency for Iowa to not only remain in the lead but also to seek out new and productive educational reforms? With this Iowan tendency to pursue new reforms, it may also be the case that if a new educational paradigm is on the horizon, Iowa may be the place for it to begin. Thus, because it holds a leading position in American education, because it has a traditional tendency toward reform, and because its position may make it a likely place for the beginning of an educational paradigm, Iowa has been isolated as the educational community for this study.

Having selected Iowa, however, the question of which educational practitioners to survey remained. The question could easily be answered from a result of prior literature search because those studies included college administrators, college faculty, school administrators, and school teachers. College administrators and faculty were initially eliminated because of the choice of Iowa as the focus of study. While there are certainly numerous college administrators and faculty working in education in Iowa, they can hardly be described as exclusively 'Iowan.' Post-secondary educators instead belong to a community of educators which transcends state lines. Their audience and colleagues exist

education, their influence is interstate and so they cannot be reasonably said to be a member of one or another state's educational communities alone.

Remaining candidates as subjects of this study, then, were teachers, principals, and superintendents. Three factors pointed to public school superintendents in Iowa as the best population for determining an educational paradigm in Iowa. The first factor is that this study is examining the paradigm for the entire state of Iowa. The state, educationally, is easily divisible into 430 public school districts (Iowa Educational Directory, 1990-91, 1990) which thereby includes the entire state. Each of those districts has a superintendent of schools. Therefore, each is represented by that chief executive officer of the school district. The second factor is the leadership role those superintendents hold. Though they may choose to act in differing ways, they are in the position of leadership for the school district. The potential impact, negative or positive, of this position is thoroughly described in Champlin's (1987) article, "Leadership: A change agent's view" in the Association for Supervision and Curriculum Development's yearbook of that year. Champlin makes the point very clearly that the superintendent in the 1980's has become the instructional leader of the school district. If (s)he chooses, (s)he can radically improve the district, devastate the district, or simply allow it to suffer through benign neglect. The public school superintendent in Iowa is in a unique position of representing his/her district's educational policies and viewpoints. A third factor also stems from his/her position in the district and the comments of Champlin. When

incremental changes in a system that serve to correct minor failings. They are discussing entirely new ways of thinking about education and its purposes (Lewis, 1989). This point has been made repeatedly in the literature review with the discussions of the national reform reports, the state reform proposals, and the schools of educational thought. Thus, the type of reform being discussed is radical and fairly all-encompassing. To move a school district to a perennialist footing or to a system consistent with the Hornbeck Report would require the rewriting of the curriculum, the restructuring of the building organization, the retraining of the staff, and numerous other major overhauls. Any of the three positions, teacher, principal, or superintendent, could be in favor of such changes but only one can truly allow them to take place, the superintendent of schools. A teacher must teach to the district curriculum and can deal only with the students assigned to him/her. A principal can operate only within the confines of his building and can make major changes within those confines only with the at least implicit approval of the superintendent. The superintendent, on the other hand, controls reform in his/her district in two ways. First, (s)he may begin the reform. His/her decision to create reform can be communicated to principals and teachers and brought about, the success of which will be a function of his/her administrative and leadership abilities. Second, (s)he can allow reform. Major structural overhauls must receive the support of the superintendent if they are to occur because they will have impact throughout the organization. Only the superintendent stands in the position of being responsible for all parts of that organization. Only the superintendent can

approve reforms proposed by his/her subordinates. The superintendent, then, is the only individual in the organization who can speak for the entire organization on the type of reform discussed in this study. (S)he is therefore also the focus of this study.

The third question was answered by reviewing the ideas of Thomas Kuhn in SSR. Since the review of Kuhnian literature has established that real educational reform would mean either a shift from pre-paradigmatic status of education to a paradigm or from one reform to a new paradigm and since the conceptualization of this study has been pursued along Kuhnian lines, it is appropriate to look to Kuhn for thoughts on which population can best be assessed for paradigmatic viewpoints. Fortunately, Kuhn provides some direction in determining which indivduals within the population are the most appropriate to observe in order to derive and investigate paradigms:

> Let us here note only one thing about it. Almost always the men (sic) who achieve these fundamental inventions of a new paradigm have been either very young or very new to the field they change. And perhaps that point need not have been made explicit, for obviously these are the men (sic) who, being little commited by prior practice to the traditional rules of normal science, are particularly likely to see that those rules no longer define a playable game and to conceive another set that can replace them. (Kuhn, 1970, p. 90)

Kuhn also makes later remarks applicable to this population question:

> Though a generation is sometimes required to effect the change, scientific communities have again and again been converted to new paradigms.... Though some scientists, particularly the older and more experienced ones, may resist indefinitely, most of them can be reached in one way or

> another. Conversions will occur a few at a time until, after the last hold-outs have died, the whole profession will again be practicing under a single, but now a different paradigm.
> (Kuhn, 1970, p. 152)

A disciplinary matrix for a field is created when this specific grouping of views is held by a consensus of the members of the field's community. The quotations above characterize the beginning and end of a paradigm shift. An innovator, typically someone new and inexperienced, views anomalies in the field and proposes a new paradigm. If the innovator is successful, the new paradigm makes converts among other members of the field and a paradigm debate ensues. Eventually, the paradigm, if successful, converts the entirety of the profession, except for a small number of the old and highly experienced. As these last members are converted or die, the new paradigm reigns. In order to best observe the paradigmatic status of educational practitioners in Iowa, then, the observed population would be three groups of superintendents: Group 1, Superintendents of Low Tenure as Superintendents; Group 2, Superintendents of Moderate Tenure as Superintendents; and Group 3, Superintendents of High Tenure as Superintendents.

The three groups were chosen for observation over the entire population for three reasons. The first, appropriately, is a function of Kuhn's views on paradigm shift. As described above, new paradigms will be seen first in the youngest members of a field, next in the mature members, and finally in the most senior members. Therefore, the most productive method of observation would occur amont those three groups.

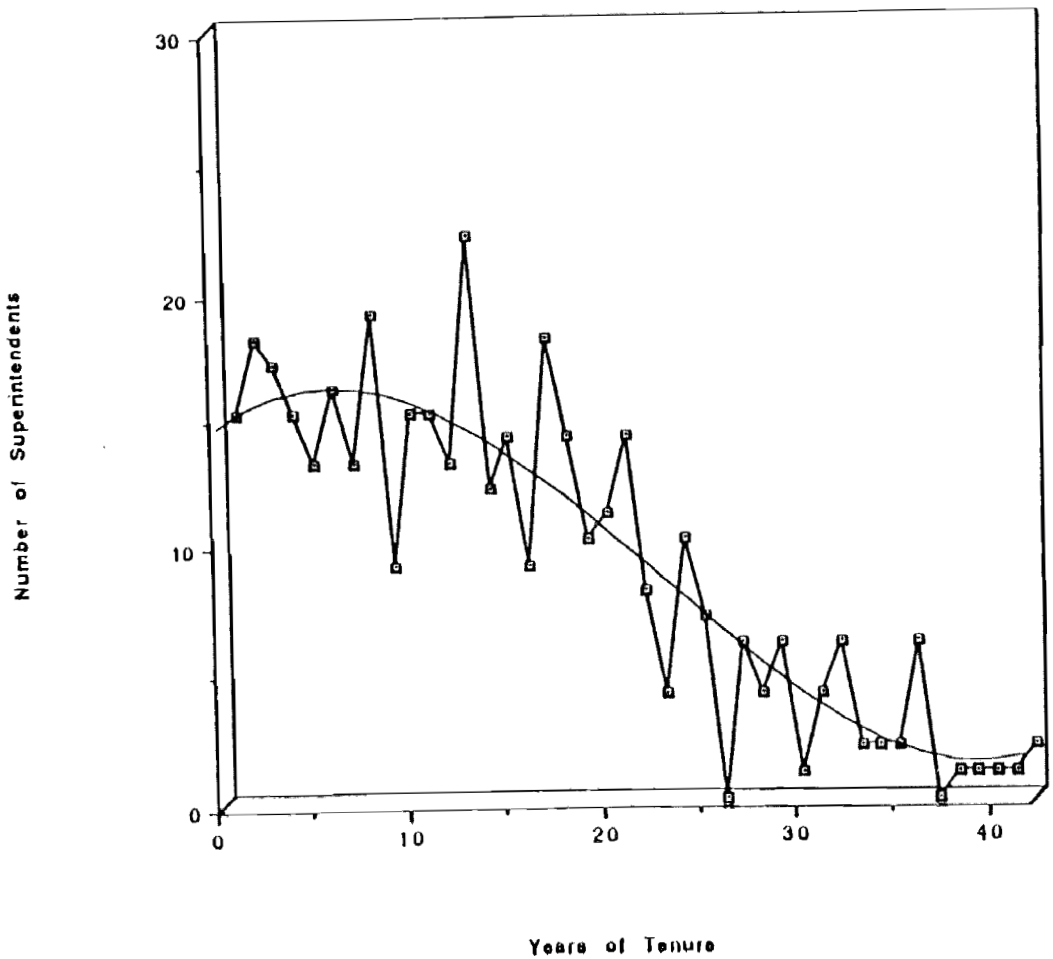
The other two reasons for selecting these three groups are entailed in

the advantages of the research technique, the extreme group method (Borg & Gall, 1989). Extreme groups, groups selected from a population because they rank highest or lowest in some attribute, have the advantages of providing the best chance of discovering a relationship and of doing so at a minimum of effort and expense. Providing the best chance of discovering a relationship, in this case, means that comparing groups of lowest and highest seniority will be more likely to demonstrate a relationship between tenure and paradigm commitment if one exists than will comparing groups of only a few years difference in seniority. If and when it is established that such a relationship exists, then, it is possible to observe the extent of the relationship by sampling groups of less disparate seniority.

On a more practical level, selecting extreme groups allows comparisons to be made while utilizing smaller sample sizes. A sample size of ten from each selected group was determined to allow for a sufficient number of subjects for a Chi Square test. If tenure groups were selected so that about ten superintendents were in each group, twelve groups would be created, requiring 120 subjects to be interviewed. At that point, the research would become prohibitively expensive for one researcher in terms of both time and resources. For all three of these reasons, the tenure groups of 1-2 years, 12-13 years, and 29-42 years were chosen.

Figure 1 shows the population of Iowa superintendents arranged by tenure. Several characteristics of this population should be noted here. While

Figure 1: Iowa Superintendents by Tenure



376 superintendents, as of September 1, 1990 (Dunn, 1990), because of the existence of sharing agreements among school districts. Sharing agreements are contracts between 2 or more school districts in which one district pays another for the services of their superintendent. As a result of sharing agreements, there are fewer superintendents than there are districts. A second fact to note is that the distribution of superintendents by tenure is positively skewed. There are more superintendents at the left of the distribution, which represents lower tenure, than there are at the right of the distribution, which represents higher tenure. This means that making groups with equal numbers of low tenure, moderate tenure, and high tenure superintendents required including a larger range of years of experience for the high tenure group.

The three groups chosen to be surveyed were:

Group 1: Low Tenure, 33 superintendents having 1 or 2 years experience. (Years of experience includes the 1990-91 school year.)

Group 2: Moderate Tenure, 35 superintendents having 12 or 13 years experience. This group was selected as the most closely median group since 165 superintendents had lower tenure and 176 superintendents had higher tenure. Any other grouping of superintendents in the middle range was further from the median group.

Group 3: High Tenure, 35 superintendents having 29-42 years of experience.

While the three groups are not equal, group 1 having 33 superintendents while groups 2 and 3 have 35 each, this, again, is the closest possible equivalence of groups. From these 3 groups, 10 superintendents were

randomly selected, using a table of random numbers, for participation in the study. Ten was chosen because it met the demand of being large enough to adequately represent the population groups and is also large enough to show statistical significance, if it exists, in a four cell Chi Square statistical test.

Limitation and Delimitations

The two limitations of this study involve geography and the nature of paradigms. The first limitation is that the results of this study cannot be generalized to states other than Iowa or even to particular regions within Iowa. Paradigms exist when an entire community has agreed to them. But in this case, a search was made for an Iowa educational paradigm. The result cannot be generalized beyond Iowa because Iowa has features which are not shared by all other states. As was noted before, Iowa students have the highest scores in the nation on several standardized tests. The majority of Iowa school districts are highly rural. One of the major standardized tests on which students are measured, the Iowa Tests of Basic Skills, is normed in Iowa. This combination of factors makes any results applicable to Iowa only.

A second limitation involves the approach to paradigm selection this study has taken. Consistent with Kuhn, this study searched for paradigms exclusively among the four classical educational schools of thought. If a radically new paradigm is sweeping Iowa, this study may have been incapable of observing this because of its Kuhnian commitment to the educational schools of thought. In the interpretation of the data, however, some attention went into this matter so that trends within or between educational schools could be observed

In addition to limitations, this study also has a number of delimitations. The first is the exclusion of practitioners outside of the superintendency. Certainly, a true paradigm eventually takes philosophical hold of every member of a community and thus paradigm trends in other practitioners such as teachers and college faculty and administration may be of interest. Their exclusion here is a definite delimitation, though a necessary one to the conduct of the study.

Another delimitation concerns the 'reform potential' of educational practitioners in Iowa. Essentially, this has come to mean agreement with one or more of the three reform initiatives discussed in Chapter 1. As such, all other active or potential reform initiatives in Iowa are excluded. Others exist including the Iowa Success Network, the Iowa Writing Project, the Essential Elements of Effective Instruction, etc. but the three descirbed earlier were identified and included for two reasons. They were offered as reforms by an authoritative branch of the Iowa educational establishment; Lepley's views from the Director of the Iowa Department of Education, the state standards from the Iowa General Assembly and the State Department of Education, and the Hornbeck Report at least in part from the Iowa State Board of Education. While the ideas for these reforms may or may not have originated with these educational stakeholders, in the end they were vocally sponsored by them. Other reform movements were not. This does not mean they cannot become the Iowa educational paradigm but it makes them less likely. This remains, nevertheless, a delimitation of this study.

A more fundamental delimitation is the use of the ideas of Kuhn. Since this study is designed to apply his notions of a paradigm to education, errors in his concepts are errors in this study. If, for example, members of the educational community are not the most appropriate population to survey in order to find the educational paradigm, the methodology is flawed. The study can be said to fairly rest on Kuhn's work, SSR. Related to this, the use of the four educational schools of thought identified in Chapter II is a definite delimitation of the study. If this list is inaccurate or incomplete, the lack of agreement on one of the listed schools of thought could inaccurately lead to the conclusion of a lack of a paradigm when in fact one exists but is simply not identified.

The fact that data was collected on paradigms and reform potential in Iowa for only a very finite period of time is a final delimitation of this study. In a pre-paradigmatic field, paradigm debate is constantly progressing. For that reason, the paradigmatic status of the field may look very different over time. Inasmuch as data was collected over a 4-6 week period, the paradigm snapshot that resulted may not remain representative over time.

Operational Definitions

Several terms required operationalized definitions for this study. All can be found in or derived from the basic questions asked in the study: What is the current paradigmatic status and reform potential of educational practitioners in

facilitate the progress of the study and the understanding of the reader.

1. Paradigmatic Status--the agreement or lack of agreement on one or more of the four classical schools of education, perennialism, essentialism, progressivism, and social reconstructionism.

2. Reform Potential--the agreement or lack of agreement with the specific components of the three reform initiatives described in Chapter 1, Standards for Iowa's Schools, the Hornbeck Report, and Dr. Lepley's vision, Creating the Ideal Schools.

3. Educational Practitioners in Iowa--the 376 superintendents of Iowa's 430 public school districts.

4. Disciplinary Matrix--"...the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community" (Kuhn, 1970) and which includes the components of generalizations/law, metaphysical paradigms, values, and exemplars, the definitions of which can be found in Chatper II.

5. Schools of education--the four schools of educational thought identified by the educational community as perennialism, essentialism, progressivism, and social reconstructionism.

Instrumentation

As noted above, four instruments were used to gather information from superintendents in this survey. The first was the Educational Ideologies Inventory, constructed by O'Neill (1981). This instrument included a typical

Likert Scale to gather information on reactions to educational statements. As such, it asked the subject to respond positively or negatively to each statment and to do so to some degree (agree, strongly disagree, etc.) Two adaptations were made to this inventory to make it usable for this study. Due to certain refinements in educational philosophy in the contemporary era, O'Neill renamed each of the educational schools with what he felt were more modern terms. Thus, although the definitions of each are indistinguishable from the definitions of the traditional schools, O'Neill used more modern terminology: Educational Intellectualism instead of Perennialism, Educational Conservatism instead of Essentialism, Educational Liberalism instead of Progressivism, and Educational Liberationism instead of Social Reconstructionism. This study listed them with their traditional terms, consistent with the Kuhnian view that paradigm shift or creation comes out of traditional schools. A second revision is the exclusion of those items which are scored for two educational viewpoints that are not included in the philosophical schools described in Chapter II and those items which are scored for broader conceptual categories. The two viewpoints not included in this study are Educational Fundamentalism, an extremely conservative ideology, and Educational Anarchism, an extremely liberal ideology. These two ideologies, because they are outside the traditional educational philosophy, as demonstrated in Chapter II, have been excluded as paradigm candidates. The two broader conceptual categories included in O'Neill's inventory are General Conservatism and General Liberalism. These two categories have little relevance to this study and so are excluded. None of

the four excluded categories were identified by any author, outside of O'Neill, in the litrature review (Knight, 1982; Park, 1963; Knight, 1940; Johnson et al., 1973; Ornstein & Levine, 1984; Howick, 1980; Strain, 1978) The full text of this inventory, as revised, can be found in Appendix A.

A full discussion of the method of item selection, construction and standardization of the inventory, and validity and content analysis of the inventory can be found below:

The Selection of Items

In general, six principles were employed in selecting items for use in the Inventory.

1. The items included were largely restricted to rather general ideas relating to social ethics and educational policies as these pertain to each of the six (four) ideological positions. In line with the theoretical assumptions discussed above, no attempt was made to extend overall principles and policies into the realm of highly specific educational practices, such as whether or not to sing Christmas carols, to observe religious holidays, to have flag salutes, and so on.

2. In a similar sense, every attempt was made to include only items that appeared to be logically implied on the basis of more fundamental ethical, political, and educational ideas that were central to the ideological position being presented. Where possible, conventional notions that have long been perpetuated on the basis that they are *correlated with* (that is, associated with, but not logically *implied by*) the more basic ideas within the positions in question were kept to a minimum. In line with this, every attempt was made to eliminate the point of view that holds that all traditional philosophies advocate some kind of prescientific and prepsychological "transfer of training" based upon outdated "faculty psychology" was avoided. In a similar sense, such spurious and untenable generalizations as that which holds that all educational intellectualists (who advocate philosophical enlightenment on the basis of perfected reason) maintain that "learning proceeds from the abstract to the concrete" were discarded.

3. Not all of the basic educational topics (such as the nature of the curriculum, classroom methods, discipline, and so on) that were used in the theoretical model (as represented by contrasting items pertaining to all six of the ideologies) were employed as sources of items in the Inventory, because, in several cases, one or more of the ideological

positions represented did not contrast sufficiently with one or more of the others to yield clearcut conceptual differences. In these cases, no attempt was made to create significant differences artificially in order to expedite the sort of conceptual organization that might have facilitated test construction.....

4. Propositions where all ideologies are (or might conceivably be) in substantial agreement have been eliminated since they obviously do not discriminate. For example, virtually all of the ideological positions would agree to such statements as: "One of the basic objectives of the school should be to teach the students how to reason effectively." "Education calls for the fullest realization of each person's unique potentiality as a particular human being." "Knowledge should be a means for ensuring survival and for advancing successful behavior."

5. Where there was agreement across general political orientations (that is, for example, between one of the "conservative" ideologies and one of the "liberal" ideologies) with respect to an idea, that idea was also eliminated as an item. ....

6. Where one or more of the three ideological positions within a general political orientation does not take a position with respect to an idea, that idea has been excluded as a basis for discrimination between positions, and no items relating to it are included in the Inventory. .... An after-the-fact analysis of the conceptual model upon which the EII was constructed indicates that this principle did not lead to any significant sins of omission with respect to the basic convictions of any of the educational ideologies represented.

(O'Neill, 1981, pp. 368-369)

Construction and Standardization

This Inventory has gone through a series of modifications and corrections. Starting with a bank of approximately three hundred items, derived from the conceptual model provided in this book, the EII has, at various stages of development, been administered to approximately 1000 students over a period of three years. Comments and criticisms were solicited, and the final revision of the Inventory was prepared on the basis of this feedback.

The revised Inventory was standardized on a group of approximately 400 students at the University of Southern California (including off-campus and overseas graduate centers of the University of Southern California), California State University at Long Beach, and California State University at Fullerton. The standardization population consisted of approximately 200 pre-service students taking upper-division courses in the undergraduate teacher education sequences at these institutions and an approximately equal number of in-service professional educators, many with years of professional experience, pursuing advanced degrees at the same institutions. Statistical

summaries relating to such things as validity, reliability, and averages were obtained from this population.

(O'Niell, 1981, pp. 371-372)

Validity and Content Analysis

The construct validity of the EII was established by comparing the Inventory items that were assigned to the various educational ideologies with the conceptual schema included in this book.

Correlation coefficients for the EII categories were computed and subjected to the Guilford scale for interpretation. This indicated that the individual ideologies were factorially "clean." In addition, the inner correlations among the positions of the more Conservative ideologies continuum and the inner correlations among those of the more Liberal ideologies continuum provided validation for the contention that the ideologies do in fact range on a continuum from extreme conservatism ... to extremel liberalism.... (O'Neill, 1981, p. 372)

Even though the Educational Ideologies Inventory has been standardized and validated ,however, two questions of validity remain. The first is the possibility that the removal of four categories and the related question in the EII could change the validity of the instrument. The categories were removed because they did not pertain to the study and because their inclusion would have greatly increased the length of the survey. A number of subjects commented on the length of the shortened survey, both in the pilot and in the actual interviews. Utilizing the entire instrument may have led to subject refusal to participate. Thus, the removal of the four categories was a trade-off between possible loss of validity and the practicality of the survey. A second question of validity involved the degree to which a subject's Likert Scale responses refleced the actual rationale for educational decision-making and behavior in practice. Without some system of sophisticated, non-interfering observation of

subjects actually at work, it may be impossible to draw any defensible links between responses on this inventory and actual practice. But the lack of such an opportunity does not make further attempts to probe the validity useless. Therefore, the second instrument used to gather data from the subjects was a brief interview designed to elicit past rationales for particular decisions. Each subject was asked about a particular decision made within the last year and subsequently asked for their reasons for that decision. The subject matter of each of these decisions was identical and therefore chosen from tasks that every Iowa superintendent must complete during a school year. These responses were then checked, for each respondent, against their score on the Educational Ideologies Inventory. The level of consistency between educational school declared on the inventory and educational school manifested in past decisions is noted in Chapter IV. The main questions asked in this brief, personal, semi-structured interview can be found in Appendix B.

In order to ensure that these experience-based questions were not biased by a restrictive educational setting, a third set of questions was included. These questions inquired into the subjects' ability to act consistently with their beliefs in their current educational setting. These questions can be found in Appendix C.

One final data collection instrument, however, was needed. These first three instruments basically collected the paradigm positions of the superintendents in Iowa. They reflected only indirectly on the potential for reform in Iowa and even more indirectly on the potential for reform along the

lines of the three reform initiatives outlined in Chapter I. (Identifying the paradigmatic status of Iowa superintendents is no less important, however, because it roughly defines the boundaries of acceptable reform and denotes the starting point of the potential reform followers.) Since there is no existing instrument for investigating the agreement of superintendents as educational practitioners with the three reform initiatives, an instrument had to be created specifically for this study. Wagner's study (1986) provides guidance for the creation of such an instrument. In order to test for a nursing 'metaparadigm' she pulled from the appropriate literature on nursing foundations those concepts which seemed relevant to a paradigm. In this case, those concepts are the topics of reform in the three initiatives.

Topics included in at least two of these three initiatives included:

1. K-12 Curriculum Offerings
2. School Organization/Ungraded Primary Education
3. Pre-K and Post-Secondary Curriculum Offerings
4. Educational Technology
5. Locus of Control/New State Standards
6. Assessment of Student Progress
7. Staff Development
8. Integration of social service agencies and other community resources into the school structure
9. Instructional Skills of Staff
10. Additional Instructional Time for Students

Inasmuch as each of the reform initiatives spoke to these topics in some fashion, some implicitly by ignoring the topic altogether, questions put to superintendents on the topics led to the superintendents' potential for accepting each reform.

Appendix D contains the questions asked in the personal semi-structured interviews which were conducted. The use of semi-structured and personal interviews was intentional because both of these characteristics enabled the interviewer to ask additional questions whenever the response given was unclear, misdirected, or insufficient (Schultz, 1982; Borg & Gall, 1989; Vockell, 1983). Subject responses were then evaluated against the specific proposals found in the three reform proposals.

The proposals on each topic, against which subject responses were interpreted, can be found below:

1. K-12 Curriculum Offerings:

A. The Hornbeck Report: Since the Hornbeck Report emphasizes results, its proposed curricula is not in the form of classes but in the form of resulting skills. It proposes curriculum designed at meeting 6 results:

> Result 1: Each student will be able to read, write, speak, and listen and to use math and foreign language skills in ways similar to what he or she will encounter in life. Result 2: Each student will be able to apply core concepts and principles from subjects such as mathematics, the sciences, the arts, the humanities, social studies, and practical living studies to situations and problems similar to what he or she will encounter in life. Result 3: Each student will become a self-sufficient individual and a responsible member of a family, work group and community. Result 4: Each student will be able to think and solve problems both in school situations and in a variety of situations similar to

> what he or she will encounter in life. Result 5: Each student will be able to connect and integrate experiences and new knowledge from all subject matter fields with what he or she already has learned. Result 6: Each student will successfully complete a high school education. (Business and Education Roundtable, 1990, pp. 8-11)

B. Lepley's Creating the Ideal School (CIS): Lepley's comments on curriculum are not nearly so comprehensive as those of the Hornbeck Report. "Curriculum in the Ideal school system is integrated across subject matter and from pre-Kindergarten through postsecondary education." (Lepley, 1990a, p. 4) A few more particulars are added for the secondary level: "Ideal secondary-level students have an interesting day ahead of them. The 12 students taking third-year Japanese are waiting for Ms. Takumaro, an instructor in a school district over 75 miles away, to begin class..." (Lepley, 1990a, p. 5) "Another group of students are heading out into the town for a day of community service activities, since community service is required of all students before graduation." (Lepley, 1990a, p. 6)

C. New Standards for Iowa's Schools (NSIS): The standards for Iowa's schools are quite specific as to what classes will be taught and what topics will be covered. Included in these mandates are: English, social studies, mathematics, science, health education, physical education, traffic safety, music, visual art, fine arts, foreign language, vocational education, career education, technology in the curriculum, global education, gifted and talented education, guidance, and media. It is mandated that these courses and topics be covered at specified grade levels. (New Standards for Iowa Schools, 1988, pp. 45-80)

2. School Organization/Ungraded Primary Education:

A. Hornbeck Report: The major organizational change this report calls for is ungraded primary schools: "Iowa should remove grade-level differentiations through the fifth grade and focus on the developmental characteristics of children, with the aim that all youngsters be ready to enter sixth grade by ages 10-12. If instruction is designed around developmental characteristics, the possibility of "failing" in school at an early age will be eliminated (Business and Education Roundtable, 1990, p. 16).

B. Lepley's CIS: Like the Hornbeck Report, Lepley also calls for the removal of grade level distinctions: "The students have moved from grade level to grade level based not on years, but on abilities. This means that in the Ideal Class of what we now call third graders, children range in age from 7 to 11." (Lepley, 1990a, pp. 4-5)

C. NSIS: While specific grade level structures are not mandated, the teacher certification requirements and the curriculum requirements (New Standards for Iowa Schools, 1988) clearly influence schools to have elementary, middle, and high schools. While there is no discussion of schools without grade level distinctions in the standards as a positive step, it is also not disallowed by the standards.

3. Pre-K and Post-Secondary Curriculum Offerings:

A. Hornbeck Report: While this proposal makes no mention of offerings past the 12th grade, it is quite insistent about Pre-K programs.

> Research proves that a high-quality prekindegarten program for disadvantaged students will positively affect the incidence of teen pregnancy, criminal arrest rates, placement in special education, employment rates, public assistance and school performance. Within two years, a high-quality half-day prekindergarten program should be made available for disadvantaged Iowa 4-year-olds whose parents wish them to attend (Business and Education Roundtable, 1990).

B. Lepley's CIS: This initiative calls for both Pre-K and post-secondary offerings. "Most Ideal students attended Ideal Preschool from 6:30 a.m. to 6:30 p.m., where play-oriented activities designed for each developmental stage helped prepare them for all-day, every-day kindergarten." (Lepley, 1990a, p. 4) Lepley's comments on post-secondary offerings are more extensive:

> One group of students is taking a college-level calculus course at Ideal school and receiving college credit for it. Another group is taking an outcome-based vocational education course from an instructor employed by the nearby area college. Many Ideal students will graduate from high school already possessing college credit. (Lepley, 1990a, p. 6)

> The Ideal district provides a continuum of education that ranges from preschool education and child care, to elementary education, to secondary education, to adult education. Iowans in the year 2010 do not think in terms of elementary/secondary versus postsecondary education. They think in terms of a continuum of services for lifelong learning. (Lepley, 1990a, p. 2)

C. NSIS: The standards speak to both Pre-K offerings and postsecondary offerings. Prekindergarten programs are explicity allowed by the standards. If a disctrict has such a program it "shall be designed to help

children work and play with others, express themselves, learn to use and manage their bodies, and extend their interests in and understanding of the world about them." (New Standards for Iowa Schools, 1988, p. 42) The description is very much like that in the Hornbeck Report.

Postsecondary offerings are covered only in the Postsecondary Enrollment Options Act (1990). This standard requires school districts to pay tuition and books, up to $250 per class per student, for any student who wishes to take a college level course, not offered at the home school district, at an accredited institution during the regular school year. The standard implicitly encourages school districts to offer such courses on-site in lieu of paying other institutions to educate their students.

4. Technology:

A. Hornbeck Report: The proposal for educational technology is vehement and specific.

> Technology will be a centerpiece in Iowa's effort for world-class schools. Technology can enhance and make efficient the delivery of advanced level courses, staff development, assessment, data collection and analysis, administration and instructional materials.
>
> In 1991, the State Board of Education should establish a Commission for Education Technology to develop a vision and a specific plan for education technology in Iowa. Within a year, the Commission should develop a five-year plan for education technology that covers all aspects of technology, including instruction and administration, video and computer, software and hardware, building needs and staff development." (Business and Education Roundtable, 1990, p. 16)

B. Lepley's CIS: Lepley's vision of technology's role in schools is more descriptive:

> Each student's desk is an intellectual adventureland. At his or her work station, each student has a microcomputer that is linked to other students, the teacher, powerful instructional databases worldwide, and other culturally diverse classrooms around the country. Students and teacher are well versed in the use of interactive television and videodiscs. (Lepley, 1990a, p. 5)

C. NSIS: The state standard on educational technology is explicit though it fails to reach the heights envisioned by Dr. Lepley:

> The Board shall adopt a plan for the efficient and effective use of technology in the instructional program. The plan shall provide for the understanding and use of current technology by staff and students and shall include a procedure to review the district's utilization of technology as a teaching and learning tool. (New Standards for Iowa Schools, 1988, p. 69)

5. Locus of Control:

A. Hornbeck Report: Unique among the three initiatives, the Hornbeck Report calls for little proactive regulation of schools, leaving the locus of control with the local district. Instead of serving in a regulatory role, the State Department of Education would be in charge of "(d)efining results, building assessment strategies, being a primary source of research-based instructional activities, helping to create the supporting initiatives and ensuring a strong system of family resource/youth service centers..." (Business and Education Roundtable, 1990, p. 18). However, with the new freedom from state control would also come accountability for [illegible]

> Successful schools, judged on the improvement of student achievement, should be rewarded, unsuccessful schools should be helped to improve and consistently inferior schools should be penalized. When schools succeed today, rarely are they rewarded. When schools fail, rarely are they penalized. A system built on results requires a system of rewards and penalties that measures a school's performance, not that of individual teachers. Schools in which the proportion of successful students grows should be rewarded. Unsuccessful schools should have access to technical assistance and support, and schools in which student achievement consistently does not improve should be penalized." (Business and Education Roundtable, 1990, p. 7)

B. Lepley's CIS: Lepley does not directly address the issue of the locus of control of education. However, in describing how the Ideal schools can be created, he states: "We can do this through state and district report cards, standards that emphasize outcomes...." (Lepley, 1990a, p. 8) The implication of this is that the state Department of Education will still be enforcing certain standards with which all districts must comply.

C. NSIS: The issue of locus of control is very clear in the standards. These mandates are state-mandated and the authority for them lies with the state.

> These standards govern the accreditation of all prekindergarten, if offered, or kindergarten through grade twelve school districts operated by public school corporations and the accreditation, if requested, of prekindergarten or kindergarten through grade tweleve schools operated under nonpublic auspices. (New Standards for Iowa Schools, 1988, p. 2)

The standards are from the state and apply to all public and some nonpublic schools.

6. Assessment of Student Progress:

A. Hornbeck Report: The key point to the Hornbeck Report seems to be reform based on the assessment of student results.

> Iowa's world-class education system should be based on results. The success of schools in the new system should be judged by how well students master a clearly defined, measurable core of learning that moves beyond minimum standards and sets high expectations for all students. Iowa's present system emphasizes process, not results, by setting strict minimum requirements for the length of the school day and school year, staffing, course offerings and other areas.
>
> Student performance should be measured with a variety of tools that reflect the complexity of what students are expected to learn. Setting high expectations for students who can think, understand ideas, and solve problems will require the creation and use of equally complex assessment strategies. Today's assessment seldom measure such complex skills, but instead too often test only a student's ability to recall or recognize facts." (Business and Education Roundtable, 1990, pp. 6-7)

B. Lepley's CIS: Like the Hornbeck Report, Lepley advocates outcome-based learning and the assessment of results. "It (curriculum) is outcome-based, so that student are assessed not on the work they complete but on the skills they master." (Lepley, 1990a, p. 4) Later, he advocates several measures for bringing about Ideal schools: "We can do this through...standards that emphasize outcomes, new techniques to assess student progress, and managment information systems that can be used to strengthen our accountability." (Lepley, 1990a, p. 8)

C. NSIS: The beginning of consistent assessment of student progress has come in the new standard 280.18. This standards mandates that schools measure and show student progress in eight different learning areas (New Standards for Iowa Schools, 1988, p. 64). As of yet, there have been no

mandates for what the schools should be doing with the collected information.

7. Staff Development:

A. Hornbeck Report: Like the proposal on technology, the proposal on staff development is quite specific:

> Staff development must assume a much larger role in a restructured Iowa education system. A high-expectation, results-based system that is evaluated with substantially different assessment strategies will require substantially different capacities and skills from Iowa educators. Virtually every educator will need some retraining.
>
> The state Department of Education should be funded to coordinate a program of staff development for all districts that provides appropriate training in school-based, shared decision making; exposure to the best research in instructional practices; a strong introductory staff development program on performance-based assessment; and continuing discussion of the restructuring effort.
>
> In addition, each Iowa school district should be funded for staff development at a rate of $25 per student per year with the requirement that the district participate for five years in a regional staff development consortium. One way to ensure stability of the program would be for the area education agencies to serve as the regional staff development consortia. After the fifth year, a district could obtain staff development from any source. (Business and Education Roundtable, 1990, p. 14)

B. Lepley's CIS: Without giving many particulars, Lepley describes staff development activities in the Ideal schools: "Flexible schedules allow teachers ample time to prepare for classes, to discuss teaching techniques with their colleagues and to enhance their own abilities through continued learning." (Lepley, 1990a, p. 3)

C. NSIS: The new standards require staff development programs in some form.

> The board shall have a plan for staff development. The plan shall provide for the professional development needs of the instructional professional staff, the noninstructional professional staff, the support staff, and educational aides. The plan shall include general goals for a three-year period and specific objectives and activities for the current school year. (New Standards for Iowa Schools, 1988, p. 82)

8. Integration of social service agencies and other community resources in the school structure:

A. Hornbeck Report:

> Children need far more than academic instruction to succeed in school. If all children are to be successful, we must deal with the whole child's needs by connecting education, health, and social services, and the home in unprecedented ways. Our goal is a system driven by children and families, rather than a series of fragmented programs in which children and families must fit.
>
> The Roundtable recommends that a family resource center be created in or near each elementary school that has 20 percent or more low-income children, and a youth service center be created in or near each middle school or high school with 20 percent or more low-income students. The centers could be patterned on similar centers in other states.
>
> Each family resource center would include services such as full-time preschool child care for two- and three-year olds, school-age child care for children ages 4 to 12, parent and child education, family support services, and health services or referral to health services.
>
> Each youth service center would include services such as primary and preventive health services, referrals to health and social services, employment counseling and training, drug and alcohol counseling, and family crisis counseling. (Business and Education Roundtable, 1990, p. 17.)

B. Lepley's CIS: Lepley is similarly an advocate of creating community, social service and resource centers out of schools:

> The Ideal Community School District buildings are hubs of the community, since citizens in the year 2010 have realized that the school is the single institution in society that can truly be an advocate, a resource and a catalyst for children, families and learners of all ages. The Ideal school district houses not only educational programs but a wealth of community resources as well.
>
> Health services, job services and human services agencies are all housed in the Ideal school. It is the community's senior citizen volunteer center. ... The Superintendent is the significant community leader responsible for coordinating children and family services, rather than education only. (Lepley, 1990a, pp. 1-2.)

C. NSIS: The standards have no provision for integrating social service agencies and other community resources in the school structure. Nevertheless, while it is not mandated, such integration would not violate any standards.

9. Instruction:

A. Hornbeck Report: Improving the instructional abilities of teachers is stressed in this report and becomes one of the heavily emphasized roles of the state Department of Education.

> By 1992, a research center should be established in the state Department of Education to identify and disseminate the best developing instructional practices in Iowa and around the world."
>
> Examples of areas on which the research could focus are learning styles, assessment, parent involvement, curriculum, leadership development, elementary school counseling, dropout prevention, special education and the education of the gifted and talented. (Business and Education Roundtable, p. 15)

B. Lepley's CIS: Lepley provides both an outline of how instruction should look and practical ways for making the requisite changes.

> In general, what can be seen looking around the Ideal district on a given day is a curriculum that centers on the use of cooperative learning, individualized instruction and an experience-based approach to learning." (Lepley, 1990a, p. 6)

> Professional isolation faced by teachers and administrators in the 1980s is a thing of the past, as technology has provided regular and instantaneous communication among teachers and administrators across Iowa and throughout the nation. A science teacher at Ideal High can contact counterparts anywhere in the nation to trade teaching techniques and obtain statistics and research. That science teacher can hook up with any of a number of databases to get up-to-the minute information for use in tomorrow's physics class." (Lepley, 1990a, p. 3)

C. NSIS: There are no provisions on instruction similar to those in the Hornbeck Report and Creating the Ideal Schools.

10. Additional Instructional Time for Students:

A. Hornbeck Report: Another outgrowth of the demand that every student master a certain number and level of skills is the proposal for more instructional time for some students.

> With the acknowledgement that virtually every student can learn at a significantly higher level comes the acknowledgement that each learns in a different way and at a different speed. By the 1991-92 school year, Iowa schools should have the capacity to allow at least a third of all students to attend school for the equivalent of 240 days per year, including time on weekends, summer and outside the regular school day. (Business and Education Roundtable, 1990, p. 15)

B. Lepley's CIS: Much like the proposal in the Hornbeck Report, Lepley proposes school times set for reasons other than the clock or calendar:

> The school year is not limited by artificial restrictions of 180 days or prescriptions for 5 1/2 hour instructional days. Flexible schedules,

> flexible teacher contracts, enlightened labor management relations and year-round learning are emphasized. (Lepley, 1990a, p. 2)

C. NSIS: The standards require minimum hours and days of instruction in schools. In (12.21) is found: "A minimum of 180 days of the school calendar ... shall be used for student instruction." (New Standards for Iowa Schools, 1988, p. 7) In (12.23) is found: "A school day shall consist of a minimum of five and one-half hours of instructional time for all grades one through twelve." (New State Standards for Iowa Schools, 1988, p. 8.) Longer school days and years are allowable but not mandated.

Once the data on superintendent perceptions of each of the categories of proposals had been collected, the degree of agreement with each proposal from the three initiatives for each of the three groups of superintendents was determined. Accompanying the degree of agreement analysis, interpretations for each proposal topic and each initiative were developed.

Procedures Utilized In This Study

This study proceded in the following steps:

1. From each of the three tenure groups of superintendents, ten superintendents were chosen at random.
2. Each superintendent was invited to participate in the study and agreed to an interview with the investigator. Each subject was interviewed using the three semi-structured interviews included in Appendices B, C, and D. After the

interviews were complete, each subject was given the Educational Ideologies Inventory.

3. Each subject was assigned a score for each of the ideological positions on the Educational Ideologies Inventory. These scores were compared to their responses to the semi-structured interview questions in Appendix B. Levels of consistency were reported. Responses to the structured interview questions (Appendix B) were verified by responses to questions on actual decisions of the superintendents (Appendix C).

4. For the entire group of superintendents, a four cell Chi Square with Yate's Correction for Continuity was performed with the expected frequency being equal for each cell, on the reasoned assumption that random choice would produce this and since each of the schools is accepted in educational practice. Each of the thirty superintendents was assigned to a specific educational school, or split in the case of a tie score on the EII. If a statistically signficant difference existed between the observed frequencies and the expected frequencies, this would indicate that one paradigm is emerging or that the paradigm debate is occurring between two dominant paradigm candidates. This process established the paradigmatic status for the entire group of thirty superintendents.

5. A twelve cell Chi Square with Yate's Correction for Continuity was then conducted on the entire sample of thirty superintendents but with consideration for both their paradigmatic status and their amount of tenure. In this case, because the analysis was performed to test for possible differences in

superintendent's paradigm commitment according to tenure, expected frequencies were calculated from the results of the four cell Chi Square in step four. Additional interpretation is similar to that in step four.

6. Steps four and five had the potential, however, for hiding certain information. Because they assigned each superintendent to a philosophical school based on the highest score only, the scores for the other three schools go unused. In order to utilize the scores on the other three schools, a twelve cell Chi Square with Yate's Correction for Continuity was next conducted within each of the three groups for each of the four classical schools. The possible score for any subject on the Educational Ideologies Inventory ranged from -28 to +28. Subjects were then assigned to one of the four categories according to the intervals -28 to -15, -14--1, 0-14, and 15-28. Expected frequencies were 1)twenty-eight for each of the most negative stances for perennialism, essentialism, and social reconstructionism, 2)twenty-eight for the most positive stance for progressivism and 3)one for all other cells because of the nature of a paradigm. The existence of a paradigm requires unanimous commitment to one school of thought and simultaneous, unanimous rejection of all other schools of thought. Less than this indicates that the field lacks a paradigm. Progressivism has the expected frequency of twenty-eight positive results because it is the only possible paradigm candidate suggested by the results of Null Hypothesis 1. Each cell inconsistent with a paradigm is still allowed an expected frequency of one to allow for minor aberrations in the instrument used and to allow the Chi Square test to be used appropriately. The observed expectancies were

then adjusted according to the requirements of Yates' Correction for Continuity. Thus, observed frequencies for the Chi Square were increased or decreased by 0.5 accordingly.

By conducting this additional Chi Square analysis, it was possible to look at educational practitioner views of each of the schools, apart from the competition between them. This is a critical point because, as was made clear from the summary of Kuhn's points in Chapter II, both acceptance of a school of thought and rejection of competing schools of thought are necessary for a paradigm to exist. If, then, one of the educational schools is widely favored *and* the others are widely rejected, one more indicator of the existence of a paradigm can be said to exist. Any other assortment of acceptances and rejections would speak against the existence of an educational paradigm.

7. Finally, an analysis of variance (ANOVA) was performed on the EII scores for each of the tenure groups (low, medium, high) for each of the educational schools. Unlike step six, which analyzed the entire group's commitment to each of the educational schools, these four ANOVA's compared commitment according to the tenure of the groups. The null hypothesis for each ANOVA was that the variances for each of the three groups would be equal. A failure to reject the null hypothesisis was interpreted as their being no difference in commitment to that educational school between the three groups.

8. The paradigmatic status, as revealed by steps four, five, six, and seven, of each of the three groups was compared. These comparisons were interpreted in Kuhnian terms. For example, if groups 1 and 2 had established paradigms

and they are the same but group 3 had a different, probably more conservative paradigm, it could have been assumed that a new paradigm was gaining preeminence and would eventually overtake the thrid group through conversion or professional or real mortality. The actual results discussed in Chapters IV and V demonstrate that though progressivism is most widely held by the superintendents, no paradigm exists.

9. Having answered the question of paradigmatic status, the question of reform potential was addressed. Degree of agreement with proposals for each topic for each group was established. Interpretive comparisons of this agreement were made for each of the three groups. Finally, degree of agreement with proposals for each topic for the entire group were established. Conclusions on what this means for each of the three initiatives were made.

Data Analysis:

Two methods of data analysis were used, statistical and descriptive. Statistical analysis included the computation of means, the use of four and twelve cell Chi Squares, and the use of the analysis of variance. A .05 significance level was used for all statistical tests. For the Chi Squares, because cell size was below five in at least one cell for each test, Yate's Correction for Continuity was employed. Since the only assumption that must be met in order to use a Chi Square is the independence of scores, and because the superintendents in this study were selected at random, a Chi Square was a valid statistical tool in this study. The ANOVA, used because of

its greater ability to find differences where they exist, required three additional assumptions: equal interval data, normality of distributions, and homogeneity of variances. Each of these assumptions was met or dealt with in a manner such that the ANOVA test could be used in a valid manner. The testing of these assumptions is described in Chapter IV, immediately preceding the testing of Null Hypothesis 4.

As opposed to statistical analysis, descriptive anlaysis was done on the reform potential from the semi-structured interviews. Degrees of agreement were reviewed for this question.

Once the results had been collected, they required interpretation consistent with the model of paradigm shift or reform as described by Kuhn. Therefore, a discussion of that interpretation is in order. Kuhn (1970) described a process of change in a field of study which occurred through the argument, rational and nonrational, of its members. If a new or initial paradigm was to gain success, it first won over those newest members of the profession, then those of moderate and high tenure, and finally those of most senior tenure. Some of this last group might never be swayed and then only mortality would finally end the debate. As a change model, Kuhn's is quite simple, though supported evidentially in his essay (1970). Other steps exist in the process of change, of course, but are either less certain or of less relevance to Kuhn and this study. Nevertheless, from this model, an interpretation of the potential results of this survey was made.

Interpretation of the statistical analysis of the EII results: A number of possible alternatives exist for the Chi Square and ANOVA statistical analyses of the EII scores. Each alternative leads to different conclusions based on the Kuhnian change model. Five alternative interpretations of findings from the data analysis were identified and taken to their logical conclusions. This was accomplished by the investigator asking, if the data described condition X, what would this mean in the context of the Kuhnian model of change? These five are described here though this is not intended to be an exhaustive list.

The first alternative, and that suggested by the null hypotheses, is that there exists no statistically signficant difference between the philosophical schools chosen by the any of the groups of administrators and those that would be expected if chosen at random. In this case, it can simply be concluded that, in Iowa, there is currently no educational paradigm and none emerging. This must be prefaced, of course, with the qualifications that a paradigm may be existing or emerging that is not determinable with the methods and alternatives used in this study

A second alternative is that all three of the groups surveyed select one specific school as consistent with their beliefs. In this case, it can be concluded that, within the limitations of this study, that educational school is currently the educational paradigm among superintendents in Iowa. In addition, paradigm shift is not occurring because the group of superintendents with the least seniority are showing no predilection toward some other school. To affirm this

superintendents within every group would have to choose that school.

This leads to the third alternative, agreement of the second and third groups of superintendents with one school and the agreement of the first group with a different school. This would point to the existence of a paradigm in Iowa education which is currently under scrutiny by the newer members of the profession, indicating the potential for paradigm shift. It is not possible to say that paradigm shift is occurring because the new school of thought may still fail in its debate with the old paradigm. A similar conclusion could be derived from similar circumstances among the second and third groups and a lack of any agreement within the first group. Paradigm confusion among the less tenured members of a profession can also signal a possible paradigm shift (Kuhn, 1970).

But, again, the paradigm shift is only potential because a new paradigm may either fail to emerge or fail to surmount the presumption of the existing paradigm. The fourth alternative points more definitely, though certainly not infallibly, to real paradigm shift. If it was found that both the first and second groups had adopted a specific school while the third had not, this would indicate the real possibility that a paradigm was being adopted. If the third group had a different paradigm, a paradigm shift would be indicated. If the third group had no paradigm at all, an initial paradigm would be indicated. Again, none of these conclusions would be certain, but the conditions would match those described or presumed under Kuhn's model.

general paradigm agreement within each of the three groups but no agreement between the groups. An example of this would be if the third group held perennialist views, the second group held essentialist views, and the first group held progressivist views. Such conditions would indicate tenure cohort paradigm agreement. A probable interpretation of this would be that education succumbs, as some authors have said, to the pendulum effect, a longitudinal tendency for the field of study to 'swing' from one ideological position to another over time with none of the positions maintaining permanence over a period of time (May & Aldridge, 1990). In this case, paradigms either exist for brief periods or, more likely, schools of thought are embraced by a majority of the profession for periods of time, soon to be replaced by others but that a true paradigm, a viewpoint held by all members of the profession, never exists.

These five interpretations and data alternatives, while not exhaustive, should clarify the possibilities arising from the analysis of the results of the EII. What remains, then, is the possible analysis of the final semi-structured interview of the potential for reform in Iowa.

Interpretation of the responses to the semi-structured interview questions on reform potential: No statistical analysis was conducted on the responses to these questions beyond simple degree of agreement. Basically, the responses were used to indicate the willingness of Iowa superintendents to support specific reforms in each of the ten educational areas discussed. The results of this could have indicated that the component parts of one or more of the three Iowa reform proposals has the support of Iowa superintendents or one tenure

group of those superintendents. Varying interpretations are possible depending on the agreement with different components, the agreement with any one or more of the general reform proposals, and the agreement of one or more of the superintendent groups different from the agreement of one or more of the other superintendent groups. Each of the resulting alternatives are descriptively explored in Chapter 5 along with any reasonable ties to paradigm affiliations from the EII.

Design

The design of this study is desriptive, survey research. One previously validated (O'Neill, 1981) inventory was used which utilized a Likert Scale. In addition, three semi-structured personal interviews, two to further validate the EII inventory and the other to explore reform potential of Iowa superintendents, were used. All four instruments were conducted in person with one researcher and one subject.

Controlling for Threats to Internal Validity

The threats discussed below are taken from those discussed in Vockell (1983) and Borg and Gall (1989).

Selection

The selection method used in this study was stratified random sampling. Subjects were selected at random, using a table of random numbers, from the three target groups. The three groups were chosen as a result of the premise, from Kuhn, that members of a particular field of study would differ in their

willingness and thus speed of new paradigm acceptance dependent upon their tenure. Because the groups were selected for a purpose relevant to the study and the subjects were selected at random within those groups, no selection problems existed. Every effort was made by the researcher to persuade those selected to participate. Only one subject, discussed below, excused himself from the study.

Experimental Mortality

The only possible mortality threat to the study is the removal from the population of some of the potential subjects by death, some other form of inaccessibility, or a refusal to participate. One subject, a member of the high tenure group, did, indeed, refuse to participate and was replaced by the next subject on the list, which was ordered by years of tenure. The replacement had an equal number of years as the originally selected superintendent. No other measures were taken to somehow find an 'equal' replacment. This method of replacement was decided upon before any subjects were contacted.

Statistical Regression

Due to the lack of any sort of pretest or treatment, statistical regression was not a viable threat to the internal validity of this study.

Instrumentation

Two issues of instrumentation were possible for this study. The first was a change in the instrument or a change in the administration of the instrument from pretest to posttest. This was not a threat to the study, however, because

issue was the overall reliability and validity of the data produced by the EII and personal interviews. The EII had been previously validated by the author (O'Neill, 1981) of the instrument, as described earlier in this chapter. The personal inteview questions were created based on a content analysis of the reform initiatives, described earlier in this chapter. These have face validity. In order to maintain consistency of the administration of the EII and the personal interviews, two precautions were taken. First, only one interviewer was used. This eliminated the potential problem of inter-observer differences. Second, the administration of the EII and personal interview were conducted from a written script. The EII was actually handed to the subjects and completed by them. The personal interviews were conducted by the investigator with each subject being asked the identical initial questions, as written on the interview script. Some secondary questions were used, which varied from subject to subject, to solicit additional information from the subjects. While these precautions did not eliminate all instrumentation threats, they minimized them within the constraints of the purposes of the study

Testing

The threat of testing requires that a pre-test influence scores on a later test. Since, again, these instruments were given only once to any one subject, testing could not have been a threat.

Maturation

The threat of maturation requires that some change occur in the subject while the treatment

instruments. Since these instruments were given only once and over a period of time of approximately 50-60 minutes, maturation was not a threat to internal validity.

History

History as a threat in the sense of different experiences of subjects between testings is impotent. However, history as a threat involving the changing mind set, dependent on experiences immediately preceding testing, of a subject could have been a threat. Like anyone, a superintendent will be subject to 'good' and 'bad' days and these may have influenced the answers given in all four of the instruments. There was no reason to believe, however, that any particular group of superintendents was having experiences of one sort or another different than another group of superintendents.

The threats to internal validity of this study, then, were mild. Because it was a descriptive study, threats to validity were more likely to enter into the type of instrument used. This question was addressed above in the section on instrumentation.

Hypotheses

Nine null hypotheses were tested in this study. These were:

Null Hypothesis 1: EF=OF; No statistically significant difference will exist between expected frequencies and the observed frequencies of paradigm commitment in the entire group of

Null Hypothesis 2: EF=OF; No statistically significant difference will exist between expected frequencies of the entire group and the observed frequencies within each tenure cohort of paradigm commitment in the three tenure cohort groups.

Null Hypothesis 3: EF=OF; No statistically signficant difference will exist between expected frequencies for a paradigm to exist and the observed frequencies of agreement intervals for the four educational schools in the entire group of thirty superintendents.

Null Hypothesis 4: No differences in the mean scores on the EII Perennialism subscale will exist between the high, moderate, and low tenure groups of superintendents.

Null Hypothesis 5: No differences in the mean scores on the EII Essentialism subscale will exist between the high, moderate, and low tenure groups of superintendents.

Null Hypothesis 6: No differences in the mean scores on the EII Progressivism subscale will exist between the high, moderate, and low tenure groups of superintendents.

Null Hypothesis 7: No differences in the mean scores on the EII Social Reconstructionism subscale will exist between the high, moderate, and low tenure groups of superintendents.

Null Hypothesis 8: (Descriptive only.) The agreement of subjects with the three reform initiatives will be equivalent among each of the three groups

Null Hypothesis 9: (Descriptive only.) The agreement of all the sampled subjects will be equivalent for all three reform initiatives.

Chapter IV

ANALYSIS OF THE DATA

In this study, four separate but related sets of data were actually collected. These included data set 1, the responses to the Educational Ideologies Inventory (EII) found in Appendix A. This was used to determine the respondent's consistency with each of the four philosophical schools described in Chapter II. In order to check to see if the beliefs expressed in the EII were consistent with the actual behavior of the respondent, the subjects were asked a set of experiential questions so that these responses, data set 2, could be compared to the results of the EII. These questions are included in Appendix B. Because the second set of questions asked about their actual behaviors in their current educational setting, it was also necessary to ensure that their behaviors were not 'unnatural', i.e. constrained by an educational setting which did not allow them to act acording to their own educational beliefs. Thus, each subject was asked about their perceived ability to act in ways consistent with their own beliefs. Subjects who have acted in ways consistent with their own beliefs will allow congruent comparison between the first and second data sets. The four questions, data set 3, which determined whether such a comparison could be made are found in Appendix C. Finally, each subject was asked a set of questions, data set 4, which pertained, specifically, to the three Iowa educational reform proposals outlined in Chapter 4. Having determined their general philosphical viewpoint, this final set of questions, included in Appendix D, points to the direction of a new educational paradigm, at least in Iowa.

Findings from these four sets of data are presented in this chapter. The data are presented in the following order. First, the information designed to verify the subjects' ability to act consistently with his own beliefs (data set 3) will be presented. Second, the experiential responses (data set 2), designed to verify the accuracy of the responses to the EII, are presented. Third, data set 1, showing subjects' consistency with each of the four philosophical schools, are presented. The hypothesis testing of Null Hypotheses 1-7, as described in the final pages of Chapter III,is accomplished in the presentation of data set 1. Finally, knowing the subjects' attachments to these schools, data set 4, their reactions to each of the 3 reform proposals, are presented to show the apparent extensions or paradigm shifts presented in Iowa education today.

Results of Data Set 3: Ability of the Subjects to Act in a Manner Congruent with their Educational Philosophical Viewpoint in their School District

The four questions, included in Appendix C, were put to each of the 30 subjects in the personal interviews. Each of these questions was designed to investigate the possibility that the actions or experiences of the subjects related in data set 2 were not an accurate reflection of their educational beliefs because their current environment was not permitting them to act consistently with those beliefs. Of the 30 subjects interviewed, only one communicated the idea that their educational setting was impinging on their ability to act consistently with their beliefs. This single subject, nevertheless, managed to communicate his actual beliefs very clearly. Therefore, the responses in Data Set 2 are assumed to be accurate reflections of their belief systems. The

subjects viewed their actions as being reflections of their belief systems. A further explanation of the subject responses in Data Set 3 can be found in Appendix E.

Results of Data Set 2: Congruence of Subject Action with Stated Educational Philosophical Viewpoint

As the purpose of data set 3 was to ensure that the results represented by data set 2 were valid by investigating the degree to which the subjects could act in accordance with their beliefs in their particular districts, the purpose of data set 2 was to ensure that the results represented by data set 1, the EII, were valid by investigating the degree to which subjects did, in fact, act in accordance with their beliefs. Data set 2 is included in Appendix B and is made up of twelve questions which are a mixture of open-ended and close-ended questions. Four major concerns undergird the twelve questions. Each triad of questions (1,2, and 3; 4,5, and 6; 7,8, and 9; and 10,11, and 12) represent one of these major areas of concern or improvement in a school district. These concerns are curriculum, Phase III (a state-funded but district-designed program which pays teachers for excellent performance in the classroom, supplementary activities or jobs beyond their normal duties, pursuit of school restructuring, or some combination of all three), staff development, and teacher hiring, respectively. Each triad of questions includes a question which asks about the subject's specific behavior in their current setting. As a back-up to this, each

or reasons for specific actions. Finally, every triad of questions, besides 4,5, and 6 (Phase III is such a general program around the state of Iowa that it was difficult to design a question which would 'get at' the differences between the four philsophical schools in question), includes one hypothetical multiple choice question. Each set included each type of question for a specific reason. The closed, hypothetical questions were included because they represented the most direct route to generating a subject response which could be coded to exactly one of the philosophical schools. At the end of each choice in the hypotheticals in Appendix B is listed, in parentheses, the philosophical school which it represents. The questions which ask about the subject's actual behavior in regard to that area was designed to check for consistency between their selection and their behavior. In case the behavior was not particularly telling, in regard to a particular school, the final question, which asked for purposes or reasons for the actual behavior, represented one of the schools for comparison purposes. Additional questions were asked when probing was necessary to finally arrive at some sort of conclusions. This ability to probe is one of the major advantages (Borg & Gall, 1989) of the personal interview and it was used repeatedly in this study.

The resulting information provided seven indicators of attachment to philosophical school aside from the EII results. These seven included 3 responses to hypothetical questions and 4 responses to experiential questions along with the probing questions of purpose or intent. As show in Figure 2,

Figure 2: Data Set 2--Consistency of EII, Hypothetical, and Experiential Responses				
		Hypothetical	Experiential	Consistent/
Subject:	EII Result:	Question:	Questions:	Inconsistent:
1A	Progressive	Progressive	Progressive	Consistent
1B	Progressive	Progressive	Progressive	Consistent
1C	Progressive	Progressive	Progressive	Consistent
1D	Essentialist	Progressive	Progressive	Inconsistent
1E	Progressive	Progressive	Progressive	Consistent
1F	Prog/Ess	Progressive	Progressive	Consistent
1G	Progressive	Progressive	Progressive	Consistent
1H	Progressive	Progressive	Progressive	Consistent
1I	Progressive	Progressive	Progressive	Consistent
1J	Progressive	Progressive	Progressive	Consistent
2A	Progressive	Progressive	Prog/Ess	Consistent
2B	Progressive	Progressive	Prog/Ess	Consistent
2C	Progressive	Progressive	Progressive	Consistent
2D	Progressive	Progressive	Progressive	Consistent
2E	Progressive	Progressive	Progressive	Consistent
2F	Progressive	Progressive	Progressive	Consistent
2G	Progressive	Progressive	Progressive	Consistent
2H	Progressive	Progressive	Progressive	Consistent
2I	Progressive	Progressive	Progressive	Consistent
2J	Progressive	Progressive	Progressive	Consistent
3A	Prog/Per	Progressive	Progressive	Consistent
3B	Progressive	Progressive	Progressive	Consistent
3C	Prog/Per	Prog/Sr	Progressive	Consistent
3D	Prog/Sr	Progressive	Progressive	Consistent
3E	Progressive	Progressive	Progressive	Consistent
3F	Essentialist	Progressive	Progressive	Inconsistent
3G	Prog/Ess	Progressive	Progressive	Consistent
3H	Progressive	Progressive	Progressive	Consistent
3I	Progressive	Progressive	Progressive	Consistent
3J	Progressive	Progressive	Progressive	Consistent

educational school. For twenty-eight of the subjects, these responses were consistent with their EII results which also indicated that they favored the Progressive School. Twenty three of these twenty-eight scored highest on the Progressive scale while five had two high scores, one of which was progressive. Of the two subjects that remained, both scored highest on the Essentialist scale and scored second highest on the Progressive scale. In fact, on a range of 56 points, the Progressive scale fell only 1 and 2 points behind the Essentialist scale for those two subjects. In addition, both subjects expressed Progressive preferences in their responses to the hypothetical questions and the behavior questions.

Thus, data set 2 indicates that the responses to the Educational Ideologies Inventory were not divorced from subject behavior. Subject multiple-choice selection responses to hypothetical questions and subject reported behavior was consistent with subject responses on the EEI.

Results of Data Set 1: Subject Responses on the Educational Ideologies Inventory

Having substantiated subject responses on the Educational Ideologies Inventory (Appendix A) with the information in data set 2, the results of the EEI can be reported. Their reporting will differ from the reporting of data sets 2 and 3 in two ways. First, these data are more easily and validly quantifiable. Thus, the appropriate statistical tests were performed on the data. Second, the results of the EEI have been reported and statistically analyzed but not interpreted.

until they were reported and interpreted, the information in data set 1 could not be validly considered. Thus, both sets of data were interpreted. The interpretations of this data set follows in Chapter 5.

The EII data were collected by asking each subject to complete the Educational Ideologies Inventory immediately prior to the personal interview by the researcher. Each subject consented to complete the survey. Upon completion of the interview, the survey was scored using the coding sheet at the end of Appendix A. This provided a score for each subject for each educational philosophical school. With this information, the first seven null hypotheses were tested.

Null Hypothesis 1: EF=OF; No statistically signficant difference will exist between expected frequencies and the observed frequencies of paradigm commitment in the entire group of of thirty superintendents. The Chi Square Table (Table 1) including Yate's Correction for Continuity is found below:

Table 1

Frequency of Educational School of Thought Choice by Subjects

	Educational Schools of Thought			
	Perennialism	Essentialism	Progressivism	Social Reconstructionism
Observed Frequency (OF):	1.5	3.5	25.0	1.0
Expected Frequency (EF):	(7.5)	(7.5)	(7.5)	(7.5)
X_2=53.40		df=3		
Critical Value = 7.82		p<.05	Reject Null Hypothesis	

Since the Chi Square value was 53.4 and the critical value was 7.82, it was possible to reject the null hypothesis. The vast majority of the subjects preferred the Progressive educational school.

Null Hypothesis 2: EF=OF; No statistically significant difference will exist between expected frequencies of the entire group and observed frequencies within each tenure cohort group of paradigm commitment in the three tenure cohort groups. The Chi Square Table (Table 2) including Yate's Correction for Continuity is found below:

Table 2

Frequency of Educational School of Thought Choice by Tenure Cohort Group

	Educational Schools of Thought			
	Perennialism	Essentialism	Progressivism	Social Reconstructionism
Low				
Tenure (OF)	0.5	1.0	9.0	0.5
Cohort: (EF)	(0.33)	(1.0)	(8.5)	(0.17)
Moderate				
Tenure (OF)	0.5	0.5	9.5	0.5
Cohort: (EF)	(0.33)	(1.0)	(8.5)	(0.17)
High				
Tenure (OF)	0.5	1.0	7.5	0.0
Cohort: (EF)	(0.33)	(1.0)	(8.5)	(0.17)
X_2=2.23		df=6		
Critical Value = 12.59		$p<.05$	Fail to Reject Null Hypothesis	

Since the Chi Square value was 2.23 and the critical value was 12.59, it was not possible in this case to reject the null hypothesis. The primary educational philosophical orientation of the subjects is not associated with the degree of tenure as a superintendent.

Null Hypothesis 3: EF=OF; No statistically significant difference will exist between expected frequencies and the observed frequencies of agreement intervals for the four educational schools in the entire group of thirty superintendents. The Chi Square Table (Table 3) including Yate's Correction for Continuity is found below:

Table 3

Frequency of Interval of Agreement Choice for Educational Schools of Thought by Subjects

		Educational Schools of Thought			
		Perennialism	Essentialism	Progressivism	Social Reconstructionism
Interval					
-28 - -10:	(OF)	0.5	0.5	0.5	1.5
	(EF)	(28.0)	(28.0)	(1.0)	(28.0)
Interval					
-9 - +9:	(OF)	28.5	25.5	11.5	26.5
	(EF)	(1.0)	(1.0)	(1.0)	(1.0)
Interval					
+10 - +28:	(OF)	1.5	4.5	17.5	2.5
	(EF)	(1.0)	(1.0)	(1.0)	(1.0)

X_2=2224.93 df=6

Critical Value = 12.59 $p<.05$ Reject Null Hypothesis

Since the Chi Square value was 2224.93 and the critical value was 12.59, it was possible to reject the null hypothesis. While the superintendents did tend to group together in their opinions on the philosophical schools, they did not do

so in a fashion consistent with a Progressivist, or any other, paradigm. Instead, the clear majority had a middle opinion toward Perennialism, Essentialism, and Social Reconstructionism and a solid majority had a more favorable opinion of Progressivism, consistent with the findings from Null Hypothesis 1.

Before Null Hypotheses 4-7 can be tested, it had to first be demonstrated that the remaining assumptions of equal interval data, normality of distribtutions, and homogeneity of variance for the ANOVA test were met. Each is demonstrated below.

Assumption of Equal Interval Data: While Likert Scale scores, used in the EII, are not truly equal interval, they may be considered quasi-equal interval and used for this purpose (Ferguson & Takane, 1989).

Assumption of Normality of Distributions: Normality of distributions of the scores on the EII for each of the educational schools was tested in two ways. First, the mean, median, and mode scores for each school were calculated and compared. In each case, the mean and the median differed by less than one point in a potential range of 57. The mode was not a particularly useful statistic in this case inasmuch as the distributions frequently had more than one mode. The second test was the calculation of the statistics for skewedness of the distributions, g_1, and for the kurtosis of the distributions, g_2 (Ferguson & Takane, 1989). Generally, the closer the two statistics are to zero, the more the distributions can be said to approach normality. A slightly positive or negative g_1 means a slightly positively or negatively skewed distribution, respectively.

The statistic, g_1, was calculated to be the following for each school:

Perennialism	g_1= -0.23.
Essentialism	g_1= -0.14
Progressivism	g_1= 0.01
Social Reconstructionism	g_1= -0.88

Thus, the distrubutions of scores on the perennialism and essentialism subscales were slightly negatively skewed. On the progressivism subscale, the distribution was slightly positively skewed. On the social reconstructionism subscale, the distrubution was most highly negatively skewed, but still within the limits of a normal distrubtion.

The g_2 statistic, on the other hand, measures the kurtosis of the distribution, its topography. A g_2 of 0 would indicate a bell curve of normal height. Negative scores would indicate a platykurtic distribution, or one flatter than the normal bell curve. A more positive score would indicate a leptokurtic distribution, or one taller than the normal bell curve.The statistic, g_2, was calculated to be the following for each school:

Perennialism	g_2= 0.008
Essentialism	g_2= -0.854
Progressivism	g_2= -0.650
Social Reconstructionism	g_2= 125.2

The distrubution of scores on the perennialism subscale was slightly leptokurtic. On the essentialism and progressivism subscales, the distributions were somewhat platykurtic. On the social reconstructionism subscale, the distrubution was most extremely leptokurtic, indicating that, in terms of kurtosis, these scores were not normally distributed. How that lack of a normal distrubution for social reconstructionism scores was handled is discussed at the end of the discussion of the next assumption.

Assumption of Homogeneity of Variance: The assumption of homogeneity of variance was tested through the F_{Max} statistical test. For the scores on each educational school, the following null hypothesis was tested: Ho: $S_1 = S_2 = S_3$. The calculated F_{Max} statistics needed to be less than the critical value of 5.34 for three variances and nine degrees of freedom. The actual F_{Max} statistics were:

Perennialism Subscale	1.78
Essentialism Subscale	1.87
Progressivism Subscale	3.36
Social Reconstructionism Subscale	5.58

For the first three schools, the F_{Max} statistic demonstrated an acceptable homogeneity of variance. For social reconstructionism, the F_{Max} demonstrated an inability to reject the null hypothesis, meaning that the assumption of homogeneity of variance was not met.

The assumption of homogeneity of variance, then, was unmet for the scores on the Social Reconstructionism subscale. One possible remedy for this

problem is simply to presume that the fact that the ANOVA statistic is robust for violation of this assumption will solve the problem. However, a more effective manner of handling the problem is to review the purpose of using the ANOVA rather than a test with fewer assumptions. The ANOVA is used because it is more able to detect actual differences when they exist, in this case the differences between mean scores on subscales of different tenured cohorts. Thus, if the ANOVA did indicate that a difference in commitment to social reconstructionism existed between members of differing tenure levels, this result could not be substantiated because the statistical tool used was more refined than could have been reasonably used since its assumptions were not met. However, since the ANOVA used on the social reconstructionism subscale demonstrated that it was impossible to state that real differences existed, the ANOVA may be used in this case. In other words, the use of the ANOVA over a less refined statistical tool, increased the chance of a Type I error. When it was applied, no statistically significant difference was found and so no Type I error could have possibly occurred.

The data for three of the EII subscales met the assumptions for the ANOVA statistic and was used to determine differences in attachment to each educational school of thought according to degree of tenure. On the fourth subscale, social reconstructionism, the ANOVA was still used in a valid manner, though all the assumptions were not met. Again, it should be noted that the ANOVA statistic is fairly robust for violation of the assumptions of equal interval

Takane, 1989).

Null Hypothesis 4: No differences in the mean scores on the EII Perennialism subscale will exist between the high, moderate, and low tenure groups of superintendents. The ANOVA Table (Table 4) testing null hypothesis 4 can be found below:

Table 4

Analysis of Variance for EII Perennialism Subscale by Tenure Cohorts

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean Square
Amount of Tenure	14.6	2	7.3
Error (Within)	502.6	27	18.615
Total	517.2	29	F = .392

Critical Value = 3.35 $p<.05$

Fail to Reject Null Hypothesis

Since the F ratio value was 0.392 and the critical value was 3.35, it was not possible to reject the null hypothesis. No association between degree of tenure and the level of commitment to the Perennialist school was evident.

Null Hypothesis 5: No differences in the mean scores on the EII Essentialism subscale will exist between the high, moderate, and low tenure groups of superintendents. The ANOVA Table (Table 5) testing null hypothesis 5 can be found below:

Table 5

Analysis of Variance for EII Essentialism Subscale by Tenure Cohorts

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean Square
Amount of Tenure	1.867	2	0.933
Error (Within)	891.1	27	33.004
Total	892.967	29	F =0.028

Critical Value = 3.35 $p<.05$

Fail to Reject Null Hypothesis

Since the F ratio value was 0.028 and the critical value was 3.35, it was not possible to reject the null hypothesis. No association between degree of tenure and the level of commitment to the Essentialist school was evident.

Null Hypothesis 6: No differences in the mean scores on the EII Progressivim subscale will exist between the high, moderate, and low tenure groups of superintendents. The ANOVA Table (Table 6) testing null hypothesis 6 can be found below:

Table 6

Analysis of Variance for EII Progressivism Subscale by Tenure Cohorts

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean Square
Amount of Tenure	94.867	2	47.433
Error (Within)	605.8	27	22.437
Total	700.667	29	F = 2.114

Critical Value = 3.35 $p<.05$

Fail to Reject Null Hypothesis

Since the F ratio value was 2.114 and the critical value was 3.35, it was not possible to reject the null hypothesis. No association between degree of tenure and the level of commitment to the Progressivist school was evident.

Null Hypothesis 7: No differences in the mean scores on the EII Social Reconstructionism subscale will exist between the high, moderate, and low tenure groups of superintendents. The ANOVA Table (Table 7) testing null hypothesis 7 can be found below:

Table 7

Analysis of Variance for EII Social Reconstructionism Subscale by Tenure Cohorts

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean Square
Amount of Tenure	12.8	2	6.4
Error (Within)	783.9	27	29.033
Total	796.7	29	F = 0.22

Critical Value = 3.35 $p<.05$

Fail to Reject Null Hypothesis

Since the F ratio value was 0.22 and the critical value was 3.35, it was not possible to reject the null hypothesis. No association between degree of tenure and the level of commitment to the Social Reconstructionism school was evident.

The interpretation of the statistical tests of these seven null hypotheses will follow in Chapter five. The final two null hypotheses, both of which were tested desciptively only, will be considered in the next section.

Results of Data Set 4: Responses to the Semi-Structured Interview Question Regarding Three Current Reform Proposals in Iowa

The testing of the final two null hypotheses, eight and nine, required a more systematic analysis of the subjects' responses to the questions from the semi-structured interview in Appendix C than any sort of quantitative analysis. That analysis should produce two results. First, it should describe the entire group's overall view of each question or specific reform and point out any differences between the three tenure cohorts. To accomplish this, each response to each question is reviewed and grouped in some meaningful manner. Second, it should describe the entire group's apparent level of agreement with each of the three major reform proposals and point out any differences between the three tenure cohorts. To accomplish this, summaries of group responses are reported along with the stances toward the topics of each of the three reform proposals. This second task is reported briefly in Table 8. The first task will require much more elaboration. For the sake of clarity, each of the interview questions or topics (K-12 Curriculum Offerings, School Organization, Pre-K and Post-Secondary Curriculum Offerings, Technology,

Integration of Social Service Agencies into the School Structure, Instruction, and Additional Instructional Time for Students) will be dealt with in a separate paragraph. Appendix G will include the analysis along with greater detail and representative quotes from subject responses. A brief description of how each tenure cohort tended to respond to each question will be included here.

K-12 Curriculum Offerings: One of the hazards of open-ended interview questions is that responses will be varied and thus defy easy categorization. The K-12 curriculum question was: "...how would you describe the appropriate curriculum for a K-12 school?" In some cases, additional probing questions were asked of the subjects and in other cases, the subjects themselves asked clarifying questions. Rather than attempt to solicit responses in simple groups, this question was deliberately open-ended so that it would represent their views and not a simple selection between extant alternatives.

Nevertheless, *some* grouping of responses was possible. Including a miscellaneous category, the responses fell into six groups:

1. Basic Curriculum with inclusion of critical thinking skills, self esteem concerns, and new trends--8 subjects
2. Curriculum that will allow graduate to pursue any opportunity--6 subjects
3. Curriculum that meets the needs of all students--4 subjects
4. Comprehensive Education/Well-rounded Curriculum--3 subjects
5. Outcomes Based Education Curriculum--2 subjects
6. Miscellaneous (Curriculum that: Includes vocational, academic, co-

curricular, and community involvement; Is in flux; Teaches skills at elementary and concepts at secondary level; Emphasizes life survival skills and a work ethic; Includes the basic, core subjects; Matches its objectives to the objectives of standaridzed tests such as the ACT; Emphasizes the correct processes such as staff involvement, proper attention to scope and sequence, etc.)--7 subjects

On this question, the low tenure group responded most heavily to the idea that the curriculum should meet the needs of all students. The high tenure group was most concerned with the inclusion of some basic studies, first, and other curriculum areas following in importance.

School Organization: This particular question solicited more definite responses than the one on curriculum. The school organization question was: "Some educators today are suggesting that schools, especially elementary schools, stop organizing instruction by grade level and instead organize by student educational needs. What do you think of such an idea?" The results of this narrower question were more definite responses. They fell into the following groups:

1. Agree with ungraded primary education--7 subjects
2. Agree but with certain conditions--9 subjects
3. Ambivalent about the idea--7 subjects
4. Disagree with ungraded primary education--6 subjects
5. No response--1 subject

On this question, the low and high tenure groups responded fairly evenly in all of the first four response categories. They seemed equally like to agree, agree with conditions, be ambivalent, or disagree. The moderate tenure group, however, either agreed or agreed with certain conditions. As such, this group seemed most open to this fairly radical educational reform.

Pre-Kindergarten Education: Like the question above, this topic was put to the subject in order to solicit fairly narrow response alternatives. The question was: "Should the school be involved in educating children younger than Kindergarten age?" The responses fell into the following groups:

1. Agree with Pre-Kindergarten education--9 subjects
2. Agree but only under certain conditions--14 subjects
3. Ambivalent about Pre-Kindergarten education--1 subject
4. Disagree with Pre-Kindergarten education--6 subjects

On this question, each of the tenure cohort groups differed substantially. The low tenure group was fairly evenly split between the four response categories. The moderate tenure group tended to be split between agreement and disagreement. The high tenure group, somewhat anti-intuitively, was almost unanimous in their agreement with and without conditions.

Post-Secondary Curriculum Offerings: This question also solicited fairly narrow response alternatives. The question was: "What about offering courses for college credit to upper classmen in the high school?" The responses fell into the following groups:

1. Agree with post-secondary curriculum offerings--18 subjects

2. Agree but only under certain conditions--7 subjects

3. Ambivalent about post-secondary curriculum offerings--3 subjects

4. Disagree with post-secondary curriculum offerings--2 subjects

On this curriculum change, as was apparent from the numbers above, the subjects were basically favorable. Twenty-five of the subjects were in favor of the courses, at least under some conditions. Most favorable, however, were the subjects in the moderate tenure group. The low tenure group was more split between agreement, ambivalence, and disagreement. The high tenure group was willing to accept the reform but was most likely to insist upon certain conditions.

Educational Technology: This question was included because many reformers are pointing towards the major impact of new technologies on the changing face of education. The question was: " Will educational technology radically change the nature of education in schools?" The responses fell into categories similar to those in the last few questions:

1. Agree, it will radically change the nature of education in schools--12 subjects.

2. Agree, it will radically change the nature of education in schools but only if certain conditions are met--3 subjects.

3. Ambivalent about its effect--6 subjects.

4. Disagree, it will not radically change the nature of education in schools--9 subjects.

The majority of the moderate tenure group was in agreement that educational technology would radically affect education.The low and high tenure groups were more skeptical with roughly half agreeing if certain conditions were met and the other half simply ambivalent or disagreeing with the notion.

Locus of Control: This question, which dealt primarily with the new state standards but peripherally with the Hornbeck proposals on a removal of those standards, brought out some spirited responses from the superintendents. But, similarly, the responses grouped into four categories:

1. Agree with the new standards--8 subjects.
2. Agree with the standards but only under certain conditions--5 subjects.
3. Ambivalent about the new standards--5 subjects.
4. Disagree with new state standards--12 subjects

Even though almost half of the subjects disagreed with the standards, only two of these agreed with the Hornbeck proposal of having no standards but only outcome objectives. Disagreement with this idea came primarily from suspicion towards the state's ability to compensate for district conditions when applying the outcome standards, the fear of punishment for failure to meet the outcomes, and a frustration with the idea of dropping the standards so soon after the new standards were implemented.

Among the three tenure cohorts, only the high tenure group was strongly

observable trends among the three groups existed in the perceptions of the Hornbeck proposals.

Assessment of Student Progress: Since all three reform proposals had additional or different assessment systems as major parts of their content, a question on assessment of student progress was included: This question was: "Do you feel that we are sufficiently assessing or measuring student progress in school today?" Anti-intuitively, responses which proposed that new or additional assessment was needed, were counted as 'agree.' This would keep positive responses in line with former positive responses' consistency with the reform proposals. The responses fell into only three categories:

1. Agree that new or different assessment is needed in schools--24 subjects.
2. Ambivalent about the need for new and additional assessment of student progress--2 subjects
3. Disagrees that new or different assessment is needed in schools--4 subjects. .

Since twenty-four of the thirty subjects agreed with the need for new or additional assessments, the majority of each tenure group was also in agreement. However, the entire moderate tenure cohort was in agreement while fewer in the low and high tenure cohorts were in agreement. The high tenure cohort had the most in disagreement with all but one of the disagreeing subjects being in the high tenure cohort.

Staff Development: The staff development question was divided into two parts. The first part simply asked the importance of staff development and the second asked for specific, valuable staff development programs. The questions were: "Are staff development programs important for the teaching staff of schools? and "What kind of staff development programs do you think schools need?" None of the subjects disagreed with the idea that staff development programs were important. Thus, subjects agreed, agreed with certain conditions, or were ambivalent.

1. Agreed that staff development programs are important for the teaching staff of schools--21 subjects.
2. Agree that Staff Development is Important but under certain conditions--8 subjects.
3. Ambivalent about the importance of staff development programs--1 subject.

There was little noticeable bias by any one or more of the tenure cohorts towards any of the three response categories, except that the moderate tenure cohort tended to have more conditions for staff development. To the second question, eighteen separate programs or program selection methods were mentioned. Because some subjects offered more than one program and others offered none, the totals will not add up to thirty. The response categories are listed below:

Cooperative Learning--	6
Madeline Hunter Training--	4

Assessment/Authentic Assessment-- 4

Program based on Needs Assessment-- 4

TESA/Effective Schools Research-- 3

Curriculum-- 2

Higher Order or Critical Thinking Skills-- 2

Program based on District Goals-- 2

Writing Objectives-- 1

Learning Styles-- 1

Outcomes-Based Education-- 1

Iowa Writing Project-- 1

Peer Coaching-- 1

Educational Technology-- 1

Peer Helpers-- 1

Whole Language-- 1

Quest-- 1

Mastery Teaching-- 1

Thus, though there was a strong consensus on the importance of staff development, there was little consensus on any particular program or means of selecting a program.

Integration of Social Services Agencies into the Schools: On this question, the subjects could find less consensus than on the ones immediatley above. The

community resources be given operating space in the school. Assuming that you had enough room to allow this, would you support it? Why or why not?" The assumption of enough space in the school was included because most schools would not have such space and this would have given the subjects a way of answering the question without consideration of the real content of the question, that of allowing these agencies to have influence in the schools. The responses fell into the following categories:

1. Agree with allowing social service agencies in the schools--14 subjects.
2. Agree with allowing social service agencies in the schools but only under certain conditons--3 subjects. .
3. Ambivalent about allowing social service agencies in the schools--5 subjects.
4. Disagree with allowing social service agencies in the schools-8 subjects.

The only tenure cohort group to differ greatly from the entire group of subjects was the high tenure cohort. Fully half of that group disagreed with the integration of social service agencies in the schools.

Instructional Skills of the Teaching Staff: This question inquired into the perception of the instructional abilities of teachers, generally. The question was: "Do you think most teachers have the instructional skills to meet the needs of students who can be reached educationally?" This was followed with

following ways:

1. Agree that most teachers have the instructional skills to meet the needs of students--15 subjects.
2. Ambivalent about whether most teachers have the instructional skills to meet the needs of students--4 subjects.
3. Disagrees that most teachers have the instructional skills to meet the needs of students--11 subjects.

Generally, there seemed to be no bias toward any of these three positions according to tenure cohorts. A number of solutions were offered for the problem of lack of instructional skills. The number of solutions, again, will not sum to thirty because some respondents did not respond or did not feel any need to respond. These responses included:

1. Staff Development--9 subjects
2. Better pre-teacher training--2 subjects
3. More money for more staff and lower student:teacher ratios--1 subject
4. Pre-testing to eliminate students who have mastered subject matter so that remaining students can be educated more appropriately--1 subject
5. Teacher association removal of incompetent teachers--1 subject
6. Better enforcement of curriculum guides--1 subject
7. Increase in teacher pay to bring in better, brighter people--1 subject
8. Remediation by administration--1 subject

The moderate tenure cohort group was the most enthusiastic about staff

development as a solution for inadequate instructional skills.

Additional Instructional Time for Students: The issue of whether schools are simply in need of more instructional time to better teach students was raised in three questions. These were: "Would you support a longer school year?" "Would you support a longer school day?" and "Would you support a six day week?" The strongest support was for the longer school year. Very little support existed for the longer school day and literally no support existed for the six day school week.

Responses to the question on the longer school year fell into the following categories:

1. Agree with a longer school year--15 subjects.
2. Ambivalent about a longer school year--3 subjects.
3. Disagree with a longer school year--12 subjects.

Responses to the question on the longer school day fell into the following categories:

1. Agree with a longer school day--5 subjects.
2. Agree with a longer school day but only under certain conditions--2 subjects.
3. Disagree with a longer school day--23 subjects

There was only one response to the question on the six day school week

abject look of revulsion.

There did appear to be some trends in how the subjects answered these questions according to their tenure cohorts. On the question of the longer school year, nine of the ten subjects in the low tenure cohort accepted the idea. In the other two cohort groups, only three in each group accepted the idea. On the question of a longer school day, no tenure cohort-based trends were apparent. On the final question, that of a six day week, obviously each cohort group was the same since all subjects disagreed with the idea.

Summary of Results of Testing Null Hypotheses 8 and 9:

Having presented the responses to the question in Appendix B, Table 8 summarizes them according to general responses to each question and topic by tenure cohort, whole group, and relationship to the three reform proposals analyzed in Chapter III. This Table will be referred to at length in Chapter V as subject responses are interpreted.

Generally, Table 8 shows agreement in the following areas (Agreement was indicated by at least 70% of the subjects in agreement in some fashion):

1. K-12 Curriculum Offerings--Agreement between the High Tenure group and the New State Standards.
2. School Organization (Ungraded Primary Education)--Agreemeent between the Moderate Tenure group and the Hornbeck Report and Lepley.

Table 8: Subject Response Summaries to Reform Topics

Reform Topics/Questions:	Low Tenure	Middle Tenure	High Tenure	Whole Group	Hornbeck Rpt.	Lepley's Views	New Standards
K-12 Curriculum Offerings	Meet St. Needs	No Consensus	Basic Subjects	No Consensus	Outcomes Focus	Integrated Curr.	Specific Subject
Ungraded Primary Education	No Consensus	Agree	No Consensus	No Consensus	Agree	Agree	Not Applicable
Pre-K Curriculum Offerings	No Consensus	No Consensus	Agree	Agree	Agree	Agree	Agree
Post-Secondary Curr. Offerings	No Consensus	Agree	Agree	Agree	Not Applicable	Agree	Agree
Educational Technology	No Consensus	Agree	No Consensus	No Consensus	Agree	Agree	Not Applicable
State Standards on Education	No Consensus	No Consensus	Disagree	No Consensus	Disagree	Agree	Agree
Assessment of Student Progress	Agree	Agree	Agree	Agree	Agree	Agree	Agree
Staff Development	Agree	Agree	Agree	Agree	Agree	No Applicable	Agree
Social Agencies in Schools	No Consensus	No Consensus	No Consensus	No Consensus	Agree	Agree	Not Applicable
Instructional Skills of Staff	No Consensus	No Consensus	No Consensus	No Consensus	Disagree	Disagree	Not Applicable
Additional Instructional Time							
Longer Year	Agree	No Consensus	No Consensus	No Consensus	Agree	Agree	Not Applicable
Longer Day	Disagree	Disagree	Disagree	Disagree	Agree	Not Applicable	Not Applicable
Longer Week	Disagree	Disagree	Disagree	Disagree	Agree	Not Applicable	Not Applicable

3. Pre-K Curriculum Offerings--Agreement between the High Tenure group and and the Hornbeck Report, Lepley, and the New State Standards. Agreement between the entire group and the Hornbeck Report, Lepley, and the New State Standards.
4. Post-Secondary Curriculum Offerings--Agreement between the Moderate Tenure group and Lepley and the New State Standards. Agreement between the High Tenure group and Lepley and the New State Standards. Agreement between the entire group and Lepley and the New State Standards.
5. Educational Technology--Agreement between the Moderate Tenure group and Lepley and the Hornbeck Report.
6. State Standards of Education/Locus of Control of Education--Agreement between the HIgh Tenure group and the Hornbeck Report.
7. Assessment of Student Progress--Agreement of every tenure group and the entire group with the Hornbeck Report, Lepley, and the New State Standards.
8. Staff Development--Agreement of all three tenure groups and the entire group with the Hornbeck Report and the New State Standards.
9. Integration of Social Service Agencies into the School Structure--No agreement of any group with any of the three proposals.

10. Instructional Skills of Staff--No agreement of any group with any of the three proposals.
11. Additional Instructional Time for Students--Agreement only of Low Tenure group with the Hornbeck Report and Lepley *on extending the school year only.*

The tests of these null hypotheses are interpreted at greater length in Chapter V.

Chapter V

SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Summary

The purpose of this study was to examine the paradigmatic status and reform potential of superintendents in Iowa. To do so, the subjects, thirty Iowa superintendents of low, moderate, or high tenure as superintendents, were asked to respond to the Educational Ideologies Inventory (EII), an inventory designed to determine each subject's commitment to the four classical educational schools, and to a series of interview questions, designed either to determine their views on specific educational reforms or to experientially validate their responses to the EII.

The responses to the EII were used to investigate the paradigmatic status of the subjects in that this inventory produces scores for each of the four traditional 'schools' of education, perennialism, essentialism, progressivism, and social reconstructionism. An educational paradigm can be said to exist when there is general agreement on one of the educational schools or some core of concepts from the schools. This conceptualization of paradigm is taken from Thomas Kuhn's seminal work, The Structure of Scientific Revolutions (1970). The results of these response summaries were included in Chapter IV, through the testing of the first seven null hypotheses, and have been interpreted according to Kuhn's work and the section entitled 'Interpretation of the statistical analysis of the EII results' in Chapter III.

The responses to the series of interview questions were used to investigate the reform potential of the superintendents. A review of the subjects' responses by tenure group and a comparison of these responses with the stances in the three reform proposals was included in Chapter IV. This included the descriptive testing of Null Hypotheses 8 and 9. The interpretation of this review and comparison is included in Chapter V.

Each of these null hypotheses is re-stated and interpreted in the next section.

Conclusions

Null Hypothesis 1: No statistically significant difference will exist between expected frequencies and the observed frequencies of paradigm commitment in the entire group of thirty superintendents.

In Table 1, this null hypothesis was shown to be rejected. Twenty-five and one-half of the thirty subjects (a tie score between two different 'schools' was counted as a half vote for each school) , through their responses on the EII, chose the progressivist educational school. (Note that this differs slightly from Table 1, as it does for the other tables also, because of Yate's Correction for Continuity which adjusts observed frequencies for the statistical test when the number in any one cell is less than five.) While these results are not sufficient to allow the inferences of the existence of a paradigm, the progressivist paradigm, it is necessary if that conclusion is to be made. What can be said, however, is that a complete paradigm does not exist. In a Kuhnian paradigm, *all* members

of the community agree on the paradigm. If they do not, they are simply not part of the community. It is possible, however, that the four and one-half members who do not agree with the paradigm are localized in the tenure cohorts in such a way as to demonstrate the normal process of paradigm shift. For example, if all of them were part of the high tenure cohort, this would support the conclusion that a paradigm did exist but the older members of the profession were not letting go of an old paradigm. Mortality would eventually create complete consensus for the new paradigm. If, on the other hand, all of the dissenters from the majority paradigm view were part of the low tenure cohort, this would support the idea that a new paradigm was challenging the old. The actual status of these dissenters was investigated in Null Hypothesis two.

Null Hypothesis 2: EF=OF; No statistically significant difference will exist between expected frequencies of the entire group and the observed frequencies within each tenure cohort of paradigm commitment in the three tenure cohort groups.

This null hypothesis was a test of whether any one cohort group's choice of educational school differed, statistically significantly, from the entire group's choice of educational school. Table 2 demonstrated a failure to reject Null Hypothesis 2. Thus, no one of the tenure cohorts is statistically significantly different than any other in their educational school choice. This would indicate,

paradigm shift seems to be occurring. In the low tenure cohort, for example, one and one-half subjects differed from progressivism, choosing essentialism instead. In the moderate group, all chose progressivism. These two, absent other information, could support the contention that essentialism is challenging progressivism as the paradigm. The high tenure cohort dispels this conclusion, however, because fully three subjects differ from progressivism, one choosing perennialism, one and one-half choosing essentialism, and one-half choosing social reconstructionism. This situation does not match any of Kuhn's descriptions of fields with a paradigm or fields undergoing paradigm shift. Instead, this situation is consistent only with a pre-paradigmatic field, a field of study in which schools of thought are competing to become the paradigm. Substantiating data for the conclusion that education is currently pre-paradigmatic is presented in the testing of Null Hypotheses 3 and 4-7. Replace on pages 174 and 175 the existing text with this text:

> Null Hypothesis 3: EF=OF; No statistically significant difference will exist between expected frequencies for a paradigm to exist and the observed frequencies of agreement intervals for the four educational schools in the entire group of thirty superintendents.

The data testing Null Hypothesis 3 substantiate the interpretation of the results of Null Hypothesis 2 by investigating the frequencies with which the subjects agreed or disagreed with each school compared to expected

frequencies for a paradigm. To substantiate the general direction of Null Hypothesis 1, consensus on progressivism, the data should show all or nearly all of the subjects in the agreement interval, 10-28, for progressivism and all or nearly all of the subjects in the disagreement interval, -10- -28, for the other three schools. Such a distribution would not allow Null Hypothesis 3 to be rejected. Table 3, however, demonstrates that Null Hypothesis was, indeed, rejected. It was rejected because of a two-way split for progressivism, between the agreement interval and the middle or ambivalent interval, -9- +9, and large majorities in the ambivalent interval for the other three schools.

The split between the ambivalent and agreement intervals for progressivism is the first difficulty for the claim that an educational paradigm exists in education. Full agreement on all critical points is required. These responses seem to indicate agreement on many points but less consensus on others. More damaging, however, were the generally ambivalent responses to the other schools. Perennialism had 29 subjects in the ambivalent interval with a mean score of +2.6. Essentialism had 26 subjects in the ambialent interval with a mean score of +3.63. Social Reconstructionism had 27 subjects in the ambivalent interval with a mean score of +2.9. Overall, each of the three schools had a positive score, meaning that they agreed with the school more than they disagreed with it.

Kuhnian paradigms do not allow for this sort of simultaneous agreement with several paradigms. Acceptance of one paradigm requires the rejection of all competing paradigms. The acceptance of parts of perennialism,

essentialism, and social reconstructionism points to, again, a pre-paradigmatic situation. Null Hypotheses 4-7 further analyze this phenomenon, probing again into the possibility that some transition is occurring in which either the low tenured subjects are moving in a new direction or the old tenured subjects are making a last stand on a position which has been abandoned by the rest of the field. These null hypotheses check this by comparing the mean scores on each subscale of each tenure cohort.

Null Hypothesis 4: No differences in the mean scores on the EII Perennialism subscale will exist between the high, moderate, and low tenure groups of superintendents.

Null Hypothesis 5: No differences in the mean scores on the EII Essentialism subscale will exist between the high, moderate, and low tenure groups of superintendents.

Table

Null Hypothesis 6: No differences in the mean scores on the EII Progressivism subscale will exist between the high, moderate, and low tenure groups of superintendents.

Null Hypothesis 7: No differences in the mean scores on the EII Social Reconstructionism subscale will exist between the high, moderate, and low tenure groups of superintendents.

hypotheses. Table 4 tested Null Hypothesis 4, table 5 tested Null Hypothesis 5, table 6 tested Null Hypothesis 6, and table 7 tested Null Hypothesis 7. Thus, in each case, the mean score differences for each cohort group, in each of the four schools, were not statistically significant. The committment to each school cannot be said to be different according to tenure group. Therefore, no pattern is identifiable, at least within the realm of statistical significance.

Several conclusions can be drawn from Null Hypotheses 1-7. First, the progressivist school is definitely the most popular educational school among Iowa superintendents today. It has not, however, attained the status of paradigm. It cannot attain this status until it has accomplished three things. First, it must eliminate all commitment to the other educational schools, in this study four and one-half respondents of a sample of thirty or fifteen percent of the subjects. Second, it must move more of its proponents from the ambivalent interval in Null Hypothesis 3 to the agreement interval. Finally, it must remove those points of agreement with the other schools evidenced, though not described, by the positive mean scores on the other three schools in Null Hypotheses 3 and 4-7. Without these three changes, progressivism, the only school held by the majority of these subjects, cannot be the educational paradigm in Iowa.

Null Hypothesis 8: (Descriptive only.) The agreement of subjects with the three reform initiatives will be equivalent among each of the three groups.

This null hypothesis, it must first be noted, differs significantly from the next because it does not investigate general agreement with one or more of the reform initiatives but instead investigates potential differences in agreement by tenure cohort. To accomplish this and derive from subject responses the largest amount of pertinent information possible, four descriptive analyses will be performed. First, areas of agreement between the three cohorts will be enumerated. Second, areas of disagreement will be described. Third, a more detailed review of the reaction of each tenure group to each proposal will be included. Finally, a summation of responses will be made to give a general picture of each cohort's reaction to each of the three reform initiatives.

Areas of Agreement: On four of the proposals, all of the tenure cohorts answered similarly. They all agreed that more assessment of student progress was needed in schools. They all agreed that staff development was a critical part of an effective school. On the other side, they all came to no agreement on the questions of bringing social service agencies into the schools and of the skills level of instructors. Besides having similar responses to these four proposals, the three cohorts also had similar responses to two parts of the eleventh reform proposal, additional instructional time. All three disagreed with a longer school day and a longer school week.

Areas of Disagreement: On the remaining seven proposals, the three groups differed. On the question of curriculum, the plurality of the low tenure group expressed a preference for a curriculum which met all student needs.

The high tenure cohort emphasized certain basic subjects. The moderate tenure cohort came to no consensus. Just the reverse occurred with the proposal for ungraded primary education. There, neither the low tenure group nor the high tenure group came to any consensus but the moderate tenure group was in agreement with the proposal.

The high tenure cohort was the only group that came to a consensus on pre-Kindergarten offerings. While they were in agreement with such programs, the low and moderate cohorts came to neither agreement nor disagreement. Both the moderate and high tenure cohorts were in agreement with the post-secondary offerings. Only the low tenure group came to no consensus on that issue.

On educational technology, only the moderate tenure cohort was in agreement that it would radically change education. The other two groups came to no consensus on the issue. On the state standards on education, only the high tenure group came to a consensus and that was with disagreement with them. The other two cohorts were split on the issue. Finally, the groups split on the question of a longer school year. The low tenure cohort agreed with the idea but the moderate and high tenure groups came to no consensus.

Reactions to each Proposal by Tenure Cohort: In this section, each of the eleven proposals is discussed in terms of major objections or reasons for agreement within each tenure cohort.

1. K-12 Curriculum Offerings: What was probably most evident in all three cohorts was an unwillingness to become involved in curriculum. The

subjects did not see it as their area of concern. Therefore, probably any of the reform curricula would be acceptable to the superintendents. This was definitely not a leadership area for them.

2. Ungraded Primary Education: While the moderate tenure cohort was in general agreement with this idea, the other two groups could come to no consensus. Bringing the other subjects into agreement would require three things: clear evidence that such a program benefits students, plans for educating parents and other publics on the benefits of such a program, and provisions for the social development of students along with their academic development. Were these three conditions met, the consensus of all the groups would have been agreement with the ungraded primary education.

3. Pre-Kindergarten Curriculum Offerings: The low and moderate tenure cohorts were just short of group agreement with pre-Kindergarten offerings. The high tenure group was in agreement. If such programs were voluntary, properly financed by the state, and developmentally appropriate (not traditionally academic), all three groups could move into agreement with pre-Kindergarten programs.

4. Post-Secondary Curriculum Offerings: Only the low tenure group lacked a consensus on this issue. Both of the other groups were in agreement with these offerings. Agreement from the low tenure cohort would require proper financing and a demonstration of the need for such courses and of the ability of high school students to handle such courses.

5. Educational Technology: Though the moderate tenure group was in

agreement with the idea that educational technology would radically change the nature of education, both the low and high tenure groups reached no consensus. For them to back technology as a radical change agent in education, they would have to see increased financing to actualize technology's potential and demonstrations of how technology will act as more than a tool in instruction.

6. State Standards on Education: Those who disagreed with the state standards did not do so primarily because they were imposed by the state. They objected to specific standards such as the vocational education standards and to the increased paperwork and committee time that was being devoted to their implementation. Many subjects, in fact, expressed agreement with many new standards and criticized other local administrators by saying that only state standards would make them do what is in the best interest of students. Consistent with Kuhn, the greatest reluctance to the new standards came from the most senior group. Though there was a lack of consensus in the other two groups, the trend seemed to be in the direction of the new standards. Even those who expressed a preference for local control completely balked at Hornbeck's notion of assessment of schools with accompanying rewards and punishments. With little or no change, besides the passage of time, it would seem that the new state standards will gain acceptance by the superintendents.

7. Assessment of Student Progress: The need for increased student assessment was agreed to by all three groups. Increased support for this proposal could be produced by better clarification of their use in the overall

educational program.

8. Staff Development: This proposal was also agreed to by all three groups. The only concerns were for additional time and money for the provision of staff development. Since teacher time is a function of money, better financing would seem to be the linchpin to full agreement with this idea.

9. Social Agencies in Schools: While none of the three groups could come to consensus on this issue, it was also clear that the high tenure group was the most adamantly opposed to it. The other two cohorts were fairly evenly split. One way to increase the acceptability of this proposal would be to give the superintendent full control over the social agencies involved. Many of the subjects, especially in the high tenure group but not limited to that group, however, simply felt that this was not a proper role of the school. That perception may change as that group leaves education.

10. Instructional Skills of Staff: Again, there was little consensus on the instructional skills of staff. Among those who disagreed with the idea that most teachers have the ability to meet the needs of their students, however, a majority were convinced that improved teacher training and staff development programs were the best solutions to increasing that skill level.

11. Additional Instructional Time: On the longer day and week, a consensus emerged among all three groups. This consensus was for disagreement. On the longer school year, the moderate and high tenure groups reached no consensus but the low tenure group was in agreement. Bringing agreement on all three of these proposals would require primarily the

demonstration that students and teachers could effectively use the additional time. For the longer school year, additional finances for air conditioning of facilities was also discussed.

General Cohort Reactions to the Three Reform Initiatives:

Because the low tenure cohort had so many areas at which no consensus was arrived, it is difficult to make summary statements about agreement with any of the three initiatives. On the proposal for increased student assessment, the group agreed with all three initiatives. On the proposal for more staff development, the group agreed witht the Hornbeck Report and the New Standards. On the longer school year, they agreed with the Hornbeck Report and Lepley. But they were in disagreement with the Hornbeck Report on the longer day and week. Thus, classifying them in greater agreement with any of the three initiatives over the other two is difficult.

The Moderate Tenure Cohort, on the other hand, had several more areas of consensus. They agreed with the Hornbeck Report and Lepley on ungraded primary education and on the effect of educational technology. On post-secondary curriculum offerings, they agreed with Lepley and the New Standards. They agreed with all three reports on student assessment and with Hornbeck and the New Standards on staff development. On the longer school day and week, they disagreed with the Hornbeck Report. But again, no clear preference for any of the three reform initiatives is evident.

The High Tenure Cohort also had a number of areas of agreement , similar to the Moderate Tenure Cohort. On curriculum, they were most

comfortable with the New Standards' requirements of basic subjects. Unlike the other two groups, they were in agreement with all three of the initiatives of the subject of pre-Kindergarten programs. They were also in agreement with post-secondary offerings, consistent with Lepley and the New Standards. By opposing the state standards, this cohort was both consistent with the Hornbeck Report and inconsistent with the new standards. They agreed with all three reports on student assessment and with Hornbeck and the New Standards on staff development. Finally, they were inconsistent with the Hornbeck Report by opposing the longer school day and week. Again, then, there is no consistent preference for any of the three initiatives over the other two.

Null Hypothesis 9: (Descriptive only.) The agreement of all the sampled subjects will be equivalent for all three reform initiatives.

This null hypothesis investigates general agreement with one or more of the reform initiatives by the entire group of superintendents. To accomplish this, three analyses are included. First, the whole group response to each individual reform proposal was reviewed. Second, the whole group reaction to each of the three reform initiatives was reviewed. Finally, the relationship of the whole group reaction to the reform initiatives with the educational schools was described.

Whole Group Reactions to each Proposal:

1. K-12 Curriculum Offerings: The entire group came to no consensus

on the appropriate curriculum.

2. Ungraded Primary Education: The entire group came to no consensus on the idea of ungraded education at the traditional grades of K-3.

3. Pre-K Curriculum Offerings: Even though two of the tenure cohorts could not reach consensus, the entire group did, in the main, agree with pre-Kindergarten programs. This was consistent with all three reform initiatives.

4. Post-Secondary Curriculum Offerings: As with the pre-Kindergarten programs, the entire group also agreed with post-high school offerings. This was consistent with Lepley and the New State Standards.

5. Educational Techonology: The entire group came to no consensus on the impact of educational technology.

6. State Standards on Education: The entire group came to no consensus on the new state standards on education.

7. Assessment of Student Progress: The entire group of subjects agreed that increased assessment of student progress is needed. This was consistent with all three of the reform initiatives.

8. Staff Development: The entire group of subjects agreed on the importance of staff development. This was consistent with the Hornbeck Report and the New State Standards.

9. Social Service Agencies in Schools: The entire group came to no consensus on having these agencies in the schools.

10. Instructional Skills of Staff: The entire group came to no consensus on the instructional skills of the instructional staff.

11. Additional Instructional Time: While there was no consensus on the longer school year, the entire group did disagree with the longer day and week. This disagreement was inconsistent with the Hornbeck Report. In addition, although there was no consensus on the longer school year, fully half of the subjects did agree with the idea.

General Whole Group Reactions to the Three Reform Initiatives:

The entire group agreed with the Hornbeck Report on three proposals and disagreed with it on one proposal. It also agreed with Lepley's views on three proposals. The group agreed with the New State Standards on four proposals. But the difference in the degree of agreement between the three initiatives seems less than significant.

Relationship of the whole group reaction to the reform initiatives with the educational schools: One final analysis of group reactions is relevant to this study. It was demonstrated above that, while Progressivism is clearly the educational philosophical perspective of the majority, it could not be called a paradigm in the Kuhnian sense. Knowing this, it is possible that the group's agreement or disagreement with certain of these proposals might provide an insight into educators' changing philosophical commitment.

The agreement with pre-Kindergarten programming, for example, does not seem to be a proposal which favors any of the educational schools more than any other. It is possible to imagine a social reconstructionist preschool in which children are taught specific social reforms or the party line. Or a preschool program might emphasize perennialist training, such as that

advocated by Engelmann and Engelmann (1981) in their book, Give Your Child a Superior Mind. The Engelmann's main point is that children need intensive early training in highly academic content and point to the early academic training of many famous 'geniuses' as proof. It is easy enough to also imagine preschools constructed around progessivist and essentialist formats.

However, in their responses, especially among those who agreed with the idea under certain conditions, the subjects seemed to definitely favor a progressivist preschool program, one which deals with the students at their developmental level, rather than any sort of traditional academic program. In fact, some of the subjects feared that preschool programs would quickly become, under parental pressure, classes in early reading and math and resisted this idea.

Thus, it seemed that the agreement with preschool programming was consistent with the progressivist educational school. The meaning of agreement with post-secondary curriculum offerings was less clear. Inasmuch as subjects felt that such courses were necessary to all students to advance in their education rather than be constrained by artificial, organizational restraints, it would be possible to make the argument that this, too, was a progressivist reform. Many of the subjects did, in fact, speak to the proposal in terms of meeting student needs. Thus, it is probably more a progressivist reform than any other type but it is also easy to see how it could favor some other education

progress, conversely, looks to be an essentialist proposal. At the heart of the essentialist program are certain skills which all students are expected to master. Checking for their mastery becomes a critical part of the educational program. The only non-essentialist language that came from the subjects on this proposal was, in fact, based on the idea that assessment cannot get at all the qualitative parts of being a student. Even this speaks less to the desire for assessment of skills than to the need for more effective testing instruments and technology.

The proposal for additional staff development is neutral as to an educational school. The key to preference for any one eduational school is not staff development itself but rather the content of the training in the staff development. In Chapter IV are listed the specific staff development programs that the subjects described as potentially effective. Thus, four subjects who mentioned assessment might be said to be consistent with the essentialist school as did the one who pointed to outcomes-based education. The two subjects who mentioned higher order thinking skills spoke consistently with the perennialist philosophy. But, though it is possible to interpret each response in some fashion, it is also the case that no trend toward any of the educational schools emerges from the choices presented.

The final area of agreement, that of disagreement with the longer school day and week, is also ambivalent toward commitment to any of the four educational schools. School can be extended to further the goals consistent

described what sort of goals these should be.

In summary, it seems that two of the proposals agreed to by the subjects were consistent with the progressivist school, two were not necessarily consistent with any of the schools, and one was consistent with the essentialist school. This breakdown was similar to that found in the paradigm commitment results of the EII. The trend is definitely toward progressivism but not in the exclusive manner necessary for a true Kuhnian paradigm.

Recommendations

Fourteen recommendations were made as a result of this study. The first two recommendations are for further research in the area. The remaining twelve are practical recommendations for the handling of the reform proposals included in the three reform initiatives. Much of the data and commentary leading up to these twelve recommendations is found in Appendix G.

1. Additional research needs to be conducted to analyze the educational schools into their component parts and sample agreement with those parts rather than with the school as a whole. While this study was able to point to the Progressivist school as having majority status, areas of disagreement with Progessivism and areas of agreement with the other schools obviously existed which prevented full paradigm agreement. Identifying the specific components

in some meaningful way into a paradigm apart from the four traditional schools. Perhaps educators are close to some paradigm which includes a majority of the components of progressivsim and some smattering of components usually assigned to some of the other schools. If these could be identified, some new paradigm might emerge. This would eliminate the current possibility that an actual paradigm commitment is being confused with lack of such commitment because of an emphasis on traditional schools rather than the components of those schools. Research investigating components rather than whole schools would require detailed enalysis of each school into its parts and the development of an instrument to test for agreement on these components. Both tasks would be, of necessity, difficult but they also seem to represent the next logical step in research of educational paradigm commitment.

2. The second research recommendation is for on-going sampling of educational leaders' perceptions on educational school and reform proposals over time. This research identified Progressivism as the educational school held by the majority of the subjects. Nevertheless, certain subjects preferred other schools and most subjects accepted other schools in part. These two facts eliminate Progressivism as a paradigm among educators at the current time. But these responses were just a snapshot of subject views. Does the current level of acceptance of Progressivism represent a trend toward Progressivism or a trend away from Progressivism? If educators are more progressive today

today, then it would seem that the paradigm debate is simply continuing with little hope of resolution. Without longitudinal sampling, no trends of this sort can be described.

Longitudinal sampling of subject responses to the specific reform proposals would also be helpful. The proposal for pre-Kindergarten progams is instructive. Even though some subjects were still opposed to this idea, general agreement among the subjects did exist for pre-K offerings. How does this differ from a decade ago? How does this agreement level compare with superintendent's feelings when Kindergartens were first being implemented across the country? Each of these questions speaks to the readiness of the educational establishment to begin implementing new programs. If readiness, represented by agreement of changes in agreement over time, can be demonstrated through research, reformers and practitioners will have a more productive database on which to base their decisions.

3. Changes in curriculum should be addressed to administrators other than superintendents since superintendents do not tend to see curriculum as a direct part of their responsibility. Thus, in the process of reforming curriculum, the stakeholders that need to be addressed are curriculum directors, principals, and teachers.

4. Reformers advocating ungraded primary education need to provide educators with empirical data supporting their program, plans for its

5. Reformers advocatin

proceed by building programs

experiential versus academic c

convince the state to financiall

funding of education, rather th

6. The selling of post-se

schools is almost complete. A

superintendents through resea

upperclassmen can actually b

providing these courses witho

schools. If the financial burde

example, most remaining opp

7. Major infusions of e

additional financing and additi

difference in student achiever

technologies will flow into the

8. Only time is require

of the new educational standa

gaining acceptance, though g

seen as positive by some sub

performance by many schools

district- and building-specific d
accepted, the state would have
differences. Even then, the su
of the Hornbeck Report.

9. To bring about addit
would require little more than
system of assessment to scho
more effective assessment bu
criticized the state for not prov
and systems to schools.

10. Since the only fact
development was finances, th
ways. First, it can provide ad
staff development. Second, it
percentage of their current bu
Third, it can change the requi
(PhaseIII) by mandating that a
development. Current provisi
programming but apparently r

11. Moving social serv
acceptable reform a number o

conditions that could make it more palatable. The other method of increasing its acceptance was to put their services under the control of the superintendent but that seems unlikely.

12. Proposals for reforming teacher training programs and staff development programs for improving the instructional skills of teacher will be likely accepted by Iowa superintendents. Which reforms to make, possibly the more critical question, was not a part of this study.

13. Extending the school year may be an idea whose time is arriving. The low tenure group was accepting of the idea and, if the trend continues for newer educators being more open to longer school years, soon the field will be filled with a majority in favor of the idea. Obviously, additional financing would be required for such a proposal, however. Longer school days and weeks will be met with very significant resistance among superintendents.

14. The final recommendation is for the state Department of Education to synthesize these three reform initiatives, along with any other initiatives of significance in Iowa, so that little time is spent advocating overall plans and more time is spent advocating individual proposals in a general framework. On several occasions, subjects identified themselves with Lepley or Hornbeck or the state standards and argued against one of the other initiatives. They did so apparently from a premise that the initiatives were mutually exclusive. But, as was evident from the discussion of the plans in Chapter III, many of the

some agency or group could synthesize these plans, without thereby creating yet another plan which was perceived to be in competition with the others, focus could be brought onto the actual educational reforms proposed rather than on conflicts over general plans. This synthesis is consistent with results of this study in that, among all three cohort groups and the group as a whole, there was no clear preference for any one of the initiatives over the other two. Agreement came on specific reform porposals not on entire initiatives.

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Appendix A

Educational Ideologies Inventory

Directions

This test is designed to determine your basic educational philosophy. You are aked to respond to each of the 56 statements by making an appropriate mark in one of the five response-categories which appear to the right of the statements. These indicate the *nature* of your response (whether it is positive, negative or undecided) and the *degree* (strongly agree, agreed, undecided, disagree, strongly disagree).

If you strongly agree with the statement, make an appropriate mark in space

SA	A	U	D	SD
(x)	( )	( )	( )	( )

If you disagree with the statement, make an appropriate mark in space

SA	A	U	D	SD
( )	( )	( )	(x)	( )

---

1. The teacher should be more concerned with motivating, with stimulating an interest in learning, than with conveying knowledge.

SA	A	U	D	SD
( )	( )	( )	( )	( )

2. The most valuable type of knowledge is that which involves symbolism and abstract thinking.

SA	A	U	D	SD
( )	( )	( )	( )	( )

3. Open and nonauthoritarian schools give rise to open and nonauthoritarian people.

SA	A	U	D	SD

4. In the final analysis, human happiness derives from adapting oneself to prevailing standards of belief and behavior.

SA	A	U	D	SD
( )	( )	( )	( )	( )

5. Behavior problems in the classroom generally indicate that the students are insufficiently motivated.

SA	A	U	D	SD
( )	( )	( )	( )	( )

6. Students should be expected to adhere to absolute and enduring moral standards which are based on absolute and enduring intellectual convictions.

SA	A	U	D	SD
( )	( )	( )	( )	( )

7. The school should encourage an appreciation for time-tested cultural institutions, traditions and processes.

SA	A	U	D	SD
( )	( )	( )	( )	( )

8. The school should focus on individual and group problem-solving procedures.

SA	A	U	D	SD
( )	( )	( )	( )	( )

9. Secondary education should provide the student with an orientation to life in general, emphasizing his role as a human being rather than training him for any particular social role or position.

SA	A	U	D	SD
( )	( )	( )	( )	( )

10. Public school teachers should be free to criticize whatever social conditions block the fullest realization of individual potentialities.

11. The best society is a democratic socialism which seeks the maximum degree of social justice for all.

SA	A	U	D	SD
( )	( )	( )	( )	( )

12. A deep respect for law and order is the fundamental basis for constructive social change.

SA	A	U	D	SD
( )	( )	( )	( )	( )

13. The schools should place their basic emphasis on *man as man*; that is on the sort of abiding human nature which all individuals share.

SA	A	U	D	SD
( )	( )	( )	( )	( )

14. Education is essentially its own end; it *is* life, and is only incidentally a preparation for some future course of action.

SA	A	U	D	SD
( )	( )	( )	( )	( )

15. The schools should emphasize those changes in the present social system that are required in order to bring about a more humanistic and humanizing society.

SA	A	U	D	SD
( )	( )	( )	( )	( )

16. Thinking and learning are basically collective undertakings which ordinarily occur in various sorts of group interactions.

SA	A	U	D	SD
( )	( )	( )	( )	( )

17. Education should be conducted with a full awareness of the fact that virtually all personal belief is ultimately determined by the sort of socioeconomic conditions that prevail within a given culture.

SA	A	U	D	SD
( )	( )	( )	( )	( )

18. The school should exist primarily to transmit the information and skills that children will find necessary in order to survive and succeed within the existing social order.

SA	A	U	D	SD
( )	( )	( )	( )	( )

19. The democratic (majority rule) method is the best means of resolving interpersonal differences which do not lend themselves to clear-cut intellectual resolution on rational-scientific grounds.

SA	A	U	D	SD
( )	( )	( )	( )	( )

20. Under present conditions, control over education should be invested in an enlightened minority of responsible intellectuals who are capable of implementing required social changes through the schools.

SA	A	U	D	SD
( )	( )	( )	( )	( )

21. The study of philosophy is a very important aspect of proper education.

SA	A	U	D	SD
( )	( )	( )	( )	( )

22. The school should be community-centered; it should relfect the needs and interests of the locality in which it resides.

SA	A	U	D	SD
( )	( )	( )	( )	( )

23. The overriding goal of education should be to help students identify, preserve, and transmit Truth, the objective meaning of life.

SA	A	U	D	SD
( )	( )	( )	( )	( )

24. Learning *how* to think is generally more important than *what* to think.

SA	A	U	D	SD
( )	( )	( )	( )	( )

25. The basic value of knowledge is its contemporary social utility; knowledge is primarily a means of adapting successfully within the existing social order.

SA	A	U	D	SD
( )	( )	( )	( )	( )

26. The school should restrict itself, insofar as possible, to cultivating the intellect, leaving other important aspects of individual development to other social institutions, such as the church and the family.

SA	A	U	D	SD
( )	( )	( )	( )	( )

27. The best way for a person to satisfy his future needs is to learn how to resolve his present needs satisfactorily.

SA	A	U	D	SD
( )	( )	( )	( )	( )

28. Psychotherapy conducted under the auspices of the school is generally a disguised form of social control and conformity training.

SA	A	U	D	SD
( )	( )	( )	( )	( )

29. Knowledge is ultimately a tool, a means to be used in solving the problems of everyday living.

SA	A	U	D	SD
( )	( )	( )	( )	( )

30. The school should emphasize the present rather than the historical past or the anticipated future.

SA	A	U	D	SD
( )	( )	( )	( )	( )

31. The schools should emphasize the unique personality of each child, adapting themselves to the specific nature of each individual.

SA	A	U	D	SD
( )	( )	( )	( )	( )

32. The teacher should be a model of intellectual excellence.

SA	A	U	D	SD
( )	( )	( )	( )	( )

33. The secondary schools should stress controversial social problems and issues, emphasizing the identification and analysis of underlying values and assumptions.

SA	A	U	D	SD
( )	( )	( )	( )	( )

34. Since truth, value, and human nature are relatively unchanging, the curriculum should not ordinarily vary to any signficant extent.

SA	A	U	D	SD
( )	( )	( )	( )	( )

35. Decisions about the nature and conduct of schooling should be arrived at primarily by means of reflective reason (logical analysis) rather than by popular opinion or professional expertise.

SA	A	U	D	SD
( )	( )	( )	( )	( )

36. Intelligent action in pursuit of social justice is the most important characteristic of an educated person.

SA	A	U	D	SD
( )	( )	( )	( )	( )

37. In formal eduation, the cognitive properly takes priority over the affective.

SA	A	U	D	SD
( )	( )	( )	( )	( )

38. We should seize upon the child's own needs and interests as they occur, using them as the basis for modifying instructional programs and practices.

SA	A	U	D	SD
( )	( )	( )	( )	( )

39. Control over education shc
educators who have a deep res
prudent to avoid sudden chang

SA	A	U
( )	( )	( )

40. The teacher should be a m
involvement.

SA	A	U
( )	( )	( )

41. Students should be trainec
cultural views about the nature

SA	A	U
( )	( )	( )

42. Education should be base
certainties and on the sort of c
certainties.

SA	A	U
( )	( )	( )

43. At all levels, the school sh
ability to solve his own person

SA	A	U
( )	( )	( )

44. The secondary school sh
training which makes them ad

SA	A	U
( )	( )	( )

45. The teacher should be b
activities and experiences.

SA	A	U
( )	( )	( )

46. Children should be encouraged to apply relevant classroom learnings to the solution of real out-of-school problems by involving themselves in community improvement projects, social action movements, and so on.

SA	A	U	D	SD
( )	( )	( )	( )	( )

47. Education should stress prudent and responsible action directed toward the preservation of existing social institutions.

SA	A	U	D	SD
( )	( )	( )	( )	( )

48. Schools should be run in a manner consistent with the conventional wisdom (the common sense beliefs) of society at large.

SA	A	U	D	SD
( )	( )	( )	( )	( )

49. The schools should stress the critical analysis and evaluation of prevailing social beliefs and behaviors.

SA	A	U	D	SD
( )	( )	( )	( )	( )

50. Time-tested ideas and practices are a more reliable guide to educational activities than those which are grounded in intellectual speculation.

SA	A	U	D	SD
( )	( )	( )	( )	( )

51. The best government is a representative democracy founded upon a system of free and unhampered economic enterprise.

SA	A	U	D	SD
( )	( )	( )	( )	( )

52. Education should concentrate on the "generative" subjects, like mathematics and language, which create the sort of intellectual potential which allows the student to deal more effectively with increasingly more difficult realms of experience.

53. The fullest realization of human happi
new and more person-centered social inst

SA	A	U	D	S
( )	( )	( )	( )	(

54. The schools should encourage studer
need for particular kinds of liberalizing soc

SA	A	U	D	S
( )	( )	( )	( )	(

55. At the secondary level, general evalu
essay-type examinations) are ordinarily b
content (as in objective-type examinations

SA	A	U	D	S
( )	( )	( )	( )	(

56. The schools should emphasize cultur
they should encourage only changes whi
established social order.

SA	A	U	D	S
( )	( )	( )	( )	(

Subject_____

Scoring Key (Educational Idec

Perennialism
Essentialism
Progressivism
Social Reconstructionisr

Scoring Key (Numerical Score

Strongly Agree
Agree
Undecided
Disagree
Strongly Disagree

P	E
2.___	4.___
6.___	7.___
9.___	12.___
13.___	18.___
21.___	25.___
23.___	30.___
26.___	39.___
32.___	41.___
34.___	44.___
35.___	47.___

52.___ 51.___ 43.___ 53.___

55.___ 56.___ 45.___ 54.___

Total Score:

P_____ E_____ Pr_____ Sr_____

For purposes of this study, the paradigm with the highest score, will be considered the paradigm of this subject. Therefore, this subject is a

_____ .

These scores will then be charted for each subject.

Semi-Structured Inventory: Verifi
Educational Ideologies Inventory

Thank you, _____
today. For the first part of this me
your school district. (The questio
questions exploring the rationale

1. Tell me about the last curricul
involved in.

2. Why did you make that particu

3. Let me give you, then, a hypot
four different social studies curric
school district. Which would you

A) The first is student-cen
which will be of intri
in the future. (Prog

B) The second emphasiz
they can become in
Reconstructionism)

C) The third attempts to r
heritage of Westerr

D) The final curriculum p
conservative object
(Essentialism)

4. When you agreed to the 1991
components of that plan led you

5. What is it about those compo

6. Could you describe for me a
typifies the educational u

development?

9. Back to another hypothetical situation. This time I'd like you to select one staff development program out of four possibilities.

A) A program training teachers to lead Great Books discussions. (Perennialism)

B) A program training teachers to teach students how to challenge the beliefs, norms, and institutions of their society and heritage. (Social Reconstructionism)

C) A program training teachers to break instruction down into very specific parts, each definable and sometimes dependent upon rote memorization. (Essentialism)

D) A program training teachers to better teach to the individual learning styles and needs of students. (Progressivism)

10. What was it about the last teacher you hired that most convinced you to employ that particular person for the position?

11. Why is that so important in a teacher?

12. Of these four characteristics of a teacher, then, which is most important?

A. Positive ability to work with kids. (Progressivism)

B. Thorough mastery of content. (Essentialism)

C. Personal belief in radicalism or at least far-left liberalism. (Social Reconstructionism)

D. Personal belief that certain undeniable truths must be taught in schools. (Perennialism)

Appendix C

Semi-Structured Inventory: Verification of Ability to Act in Manner Consistent with Beliefs in Current Educational Setting

With that _____, I have just three more questions. Each of these deal with your experience with the district your are currently serving.

1. What educational changes have you made at your current district?

2. Do you feel you have had support for these changes?

3. What changes haven't you made because you feel you couldn't get support?

4. Finally, what changes have you been asked to make that you disagreed with?

Appendix D

Semi-Structured Interview Questions

Now what I would like to do is simply ask you some questions so that I can get your views on some educational issues. (Some questions are followed by a parapharase of the question in case the subject asks for a restatment of the questions.)

1. To begin with, how would you describe the appropriate curriculum for a K-12 school? (What should students be taught in school?)

2. Some educators today are suggesting today that schools, especially elementary schools, stop organizing instruction by grade level and instead organize by student educational needs. What do you think of such an idea?

3. Should the school be involved in educating children younger than Kindergarten age?

4. What about offering courses for college credit to upper classmen in the high school?

5. Will educational technology radically change the nature of education in schools?

6. How do you feel about state mandates on education in general? (Do state mandates help improve education or do they take away from proper local control of education? Can you explain what you mean?)

7. Do you feel that we are sufficiently assessing or measuring student progress in school today?

Should we be doing more or something different than the Iowa Tests of Basic Skills?

8. Are staff development programs important for the teaching staff of schools? What kind of staff development program do you think schools need?

9. Due to the many social problems that are affecting children today, some people are suggesting that social service agencies and other community resources be given operating space in the school. Assuming that you had

9. Do you think most teachers have the instructional skills to meet the needs of students who can be reached educationally? If not, how can this situation be improved?

10. Would you support a longer school year?

    Would you support a longer school day?

    Would you support a six day week?

Appendix E

Responses to Data Set 3

Data set 3 was intended to investigate the degree to which the superintendents in this study perceived that they could act consistently with their beliefs in their current educationa setting. This appendix communicates their responses in detail.

Questions 1 and 2 asked: "What educational changes have you made at this district?" and "Have you had support for those changes?" To the first question, the responses varied from the highly concrete changes such as hiring new administrators, establishing curriculum review cycles, altering teacher evaluation systems, moving towards new educational programming such as whole language, outcomes-based education, etc., adding college courses on site, purchasing technology systems for classrooms, putting district finances on a line item budget, sharing services with a community college, restructuring the school calendar to include a May Term, redrawing attendance boundaries for an elementary school, establishing a middle school, combining a 1st and 2nd grade classroom, moving back to a graded system from an ungraded system, combining two elementary schools, passing bond issues, adding a preschool program and changing the social studies curriculum, to more pervasive but less tangible changes such as establishing higher expectations for students, teachers, and principals, forcing school interest groups to think in new ways or

administators and board members, being more positive, and instilling ideas of accountability in teachers. Three subjects offered no answer. With secondary questioning, made possible and necessary from obvious changes to their district during their tenure made manifest in earlier questioning from data set 2, however, it became clear that these three were simply attaching the credit for these changes to their organizational subordinates. Stated one high tenure superintendent from a district in excess of 3000 students, "The answer to that is none. I have really done nothing in that regard. It has come from the people in the system. I have never gone out and said this is what we're going to change. I think I have given people the opportunity to be what they could be, the ability to make mistakes. And hopefully support them." All, through one method or another, had felt they had made changes to their systems.

The second question: "Have you had support for those changes?", was similarly affirmatively answered. Each subject felt that they had support, varying in strength only, for those changes they had already made and would be making in their district.

Unattempted change was the subject of the third question: "Are there changes you would make at your district but feel you could not get the support for those changes?" For 16 subjects, the answer was simply a negative. All the changes they wished to pursue were being pursued, with support. For the remaining fourteen subjects, their identification of desired but unsupported

they had pursued things without success. Ten indicated that the change would still be pursued, i.e. that the conditions were not yet right for the change but that eventually the goal would be obtained. Stated one low tenure superintendent in a district of 900, in regard to desired changes in Phase III, "But we're getting there. I'm not getting there as fast as I want to get there. That would be the only one." Three of the remaining subjects told of changes they would like which were more pie-in-the-sky changes that they desired but for which massive educational change would have to occur. These included year-round schooling, a 50% cut in student to teacher ratios, and a complete exemption from state standards. The fact that these changes were not being made in their districts had little or nothing to do with the inability of the superintendent to make change consistent with their belief system. The final subject, a low tenure superintendent in a district of 300, stated that her only difference with the board had been their decision to put ceiling fans in a library when she had recommended air conditioning. She added: "I guess I was basically the leader in educational changes and I was going so fast, they had trouble keeping up with it so it was more their reaction to my suggestions than anything." From these responses, it seemed quite clear that the subjects felt enough support in their position to act in a manner consistent with their beliefs.

The final question designed to get at that consistency between belief and

unqualified affirmative response would call into question the respondent's answer to the experiential questions in data set 2 because it would indicate that the subject sometimes acts in ways inconsistent with beliefs. The clear finding from this question was that the subjects would not or did not tolerate such unpalatable directives. Twenty-eight respondents stated that they had never received directives to act in such a manner. The two that had clearly indicated that they had received pressure from board members to act in such a way but had not done so. One involved implementing a discipline system which did not include student due process and the other involved hiring a teacher primarily because of coaching ceritification. The results of this question were especially clear, and in agreement with the other three, in demonstrating that the thirty subjects did feel that their actions were not inconsistent with their educational belief system.

One possibility for incongruence between belief and action remains, however. Psychologists L. Festinger, in his work, Cognitive consequences of forced compliance (1959), described the phenomenon of cognitive dissonance, which has potential appication here. Cognitive dissonance is the mental tension which results when a person realizes he has acted in a way inconsistent with a personal belief. Festinger, for example, conducted studies in which subjects were asked to do monotonous and manifestly pointless tasks and then were rewarded in varying degrees for their performance. What

difficulty justifying their behavior in terms
developed cognitive dissonance. Their s
about the task. In his study and later stu
(1977), it was found that cognitive disson
change when the subject had a choice in
consequence to others, and when the su
responsibility for the action.

The concern that this raises for thi
superintendent could be acting in a man
because of forces or individuals acting a
cognitive dissonance, be changing his at
thusperceiving himself to be acting on his
some of these subjects have been acting
beliefs but, due to cognitive dissonance,
study, however, little can be said except
no way of determining its existence or fre
beyond thepossible threat of cognitive d
themselves to act consistently with their

Appendix F

Responses to Data Set 2

Figure 3 allows the inference that data set 2 confirms the Progressive stance expressed by the subjects on the EII. Even the two subjects with technically inconsistent responses were only mildly at odds with their beliefs inasmuch as the Progressive scale came in a strong second to the Essential scale. That being said, it is still necessary to explain the method of scoring the responses in data set 2.

Initially, the EII results were tabulated. This was a simple quantifiable task related in Chapter III and Appendix A. These results were then compared to the hypothetical questions and the experiential questions. Hypothetical responses on curriculum, staff development, and teacher hiring were coded according to the 'answer' key included at the end of each hypothetical response in Appendix B. These three responses were collected and the modal response category was accepted as that subject's educational school according to hypothetical question selection.

The experiential questions were more difficult to code. The four responses of the subjects on the areas of curriculum, Phase III, staff development, and teacher hiring were compared to the four disciplinary matrices of the four educational schools. These disciplinary matrices are found in Chapter 2. Again, the four reponses were collected and the modal response

questions and experience-based questions, every subject responded in a fashion consistent with the Progressive school.

In the coding of the experiential questions, it quickly became evident that the strength of the questions, their attachment to actual behavior in educational situations, also created two major weaknesses, the subjectivity which entered into the coding of the responses and the inability of the interviewer to consistently solicit information from the subject which was relevant to the educational schools in question. At times, subjects responded in each of the four question areas with information irrelevant to educational schools. The most productive question area, teacher hiring, produced twenty-two codable responses. The least productive question area, Phase III, produced only five. The question areas of curriculum and staff development produced 18 and 13 codable responses, respectively. Probably more piloting should have been initiated with these questions before the study began to insure that the subjects' responses would produce codable results. Phase III was a particularly poor choice. Because it is a relatively new program in the state of Iowa and something every superintendent would have to deal with, it was expected that it would yield plentiful results. In fact, no hypothetical question was possible, as explained above, and the experiential question was typically responded to in one of the three following way (quotes are followed by the identifiers of school district size in terms of rounded number of students and tenure category of

our board over here was receptive to the idea tha majority, underpaid. And so this was a method of (800, Low tenure)

2. "Well, I really didn't approve it. The Boa The plan that we have arrived at as a result of an does not include me in anything other than listeni

3. "The thing that I find in the plan which w thought would be a great plan, was the fact that t of hoops that everybody has to jump through anc the same. .... The membership (teacher associa stipend, period." (900,High Tenure)

There is little doubt that these superintend actual reactions to Phase III but these reactions c added compensation, as a process from which t and as a program with high intentions thwarted b others, really have little relevance to the educati responses were given, to varying degrees as not areas. Often, the response was so straightforwa productive because the real and entire answer h

Nevertheless, roughly one-half of subject

Progressive response.

2. "We initiated a problem-solving class. solving class in our industrial technology area wh problems and they brainstorm and experiment an (1500, Low Tenure) Progressive Response.

3. "You know we just aren't, we aren't pro competitive, to meet the competition that's out the at the skills required of a graduate...." (500, Mod Response.

Thus, data set 2 indicates that the respons Ideologies Inventory were not divorced from subj choice selection responses to hypothetical quest behavior was consistent with subject responses c

Appendix G

Data Set 4 Responses

The material contained in this appendix includes the conclusions on Null Hypothesis 8 along with a large amount of the data to support those conclusions.

K-12 Curriculum Offerings: One of the hazards of open-ended interview questions is that responses will be varied and thus defy easy categorization. The K-12 curriculum question was: "...how would you describe the appropriate curriculum for a K-12 school?" In some cases, additional probing questions were asked of the subjects and in other cases, the subjects themselves asked clarifying questions. Rather than attempt to solicit responses in simple groups, this question was deliberately open-ended so that it would represent their views and not a simple selection between extant alternatives.

Nevertheless, *some* grouping of responses was possible. Including a miscellaneous category, the responses fell into six groups:

1. Basic Curriculum with inclusion of critical thinking skills, self esteem concerns, and new trends--8 subjects

   ...I think the components of a K-12 curriculum not only have to have the basic ingredients of common learning.... But I think it also should be highly designed to stretch the kid to their limits as

Well, of cours

core requiren

have to meet

in robotics, st

2. Curriculum that v

subjects

I guess I feel

the state requ

education tha

district, either

words, or an

to attend a cc

education at

3. Curriculum that n

Just whatever

different in dif

4. Comprehensive

I guess first y

some of the th

education, a

thrust right nc

need to have

6. Miscellaneous (C

curricular, an

at elementary

survival skills

Matches its o

as the ACT; E

involvement,

subjects

On this question, th

idea that the curriculum sh

group was most concernec

other curriculum areas foll

School Organization: Thi

responses than the one or

"Some educators today ar

schools, stop organizing in

student educational needs.

this narrower question wer

should be restricted to elementary schools. (500, Moderate Tenure)

I'm very strongly in favor of it. I think we've really gone well beyond the need for chronological movement of students through the system. All kids learn at vastly different rates. Schools are no longer responsible to sort and select. The bell curve is not as good as it once was to determine the high achievers, the middle of the pack, and the people that can go to the factory floor. Because we don't need people to go to the factory floor it appears. And we need them less and less. The concept of the J curve supports the notion of varying time. The variable is the amount of time it takes to learn a concept, not that some kids will learn the concept and some kids won't. So I'm very strongly in favor of the J curve which would require a change in how we structure grade and chronological assignment to a content level. (1400, Moderate Tenure)

2. Agree but with certain conditions--9 subjects

The conditions these nine subjects put forth as prerequisite to their agreement with ungraded primary education included: long-term need for educating the public before it begins, teacher agreement with the concept, provisions for dealing with the social development of the children in this system, need for a posteriori evidence that the system will work, and the need for a graded system along side the ungraded

it was a good idea and went through the process of teaching the community why it's good... (900, Low Tenure)

I see the disadvantage of that as the social development.... So if we can do that and figure out some way to socially bring them along, great,.... (500, Moderate Tenure)

3. Ambivalent about the idea--7 subjects

I have some ambivalent feelings. I don't have a strong bias either way .... I don't think the organizational structure is nearly as critical as the methodology of instruction and the way we approach teaching and learning. (7000, High Tenure)

I could (agree) if I could see evidence that it was the thing to do, that schools, pilot schools perhaps were doing it and if we could see the results, then I might be interested in it.... I'd probably stay a little bit in reluctance to start with until I could see more results. (500, Moderate Tenure)

4. Disagree with ungraded primary education--6 subjects The reasons for disagreement with ungraded primary education included a preference for mainstreaming, a concern for the slower achieving student, a concern for students who move into or out of the system from or into a more traditional system, and a perception that an ungraded system is unnecessary to meet the needs of individual students

there is a good many things that theoretically ought to work well and don't. (900, High Tenure)

Well, we've discussed that here and I guess we have some concerns in that the brighter and the more self-motivated students, I think, benefit from that and I think you might have a tendency to leave lesser motivated, less capable students in the dust in that type of framework. (2800, Low Tenure)

5. No response--1 subject

On this question, the low and high tenure groups responded fairly evenly in all of the first four response categories. They seemed equally like to agree, agree with conditions, be ambivalent, or disagree. The moderate tenure group, however, either agreed or agreed with certain conditions. As such, this group seemed most open to this fairly radical educational reform.

Pre-Kindergarten Education: Like the question above, this topic was put to the subject in order to solicit fairly narrow response alternatives. The question was: "Should the school be involved in educating children younger than Kindergarten age?" The responses fell into the following groups:

1. Agree with Pre-Kindergarten education--9 subjects

I'm somewhat of an unusual conservative because I feel it's just like prenatal care for women. I think that we have living poor in the United States and it ought to be provided for them. In the [illegible]

Low Tenure)

...if we can attack those (problems) early, during that 3 to 8 year-old (interval), to me that is where the biggest learning traits take place. (700, High Tenure)

2. Agree but only under certain conditions--14 subjects Two of the most significant of these conditions were proper financing from the state of pre-Kindergarten education and proper approach to student learning, i.e. an experiential rather than an academic curriculum. Other concerns included that society was forcing it on the schools, that the schools had a lack of space, that it depended on community need, that it was of dubious educational value, and that it not be offered to students below the age of four.

I think it's time that our state legislature fund that to the point where it can be made available to all kids. Right now, those parents who can afford to send them to a private pre-school will do that. The handicapped get served. The general public we should probably be serving at this school but the funds are just not there. We won't do it ... until we get index money to do it. (500, Moderate Tenure)

The pre-Kindergarten people want social skills and go that way. I'm not much for the early learning class or early reading classes and that type of

reading and that's what I want for my child.' And I don't see that as the most important. (400, Low Tenure)

3. Ambivalent about Pre-Kindergarten education--1 subject

...basically I think it could be good but I don't want to ...I don't know when you quit. Or when you should start. If the parents are doing nothing more than taking them to a babysitter, I think the school should have them. I think if the parents are spending quality time with the kids, they should have them. So I'm hedging on that one depending on the parent and the kid and the circumstances. (900, Low Tenure)

4. Disagree with Pre-Kindergarten education--6 subjects Reasons for disagreement included the beliefs that the school should not be asked to solve all of society's problems especially those that belong to parents, and that children should not be taken from their parents for formal learning earlier than age five.

I don't think the school system can solve all of the social problems. (700, Low Tenure)

Our society is taking our kids away ... too early already. (600, Low Tenure)

On this question, each of the tenure cohort groups differed substantially

and disagreement. The high tenure group, somewhat anti-intuitively, was almost unanimous in their agreement with and without conditions.

Post-Secondary Curriculum Offerings: This question also solicited fairly narrow response alternatives. The question was: "What about offering courses for college credit to upper classmen in the high school?" The responses fell into the following groups:

1. Agree with post-secondary curriculum offerings--18 subjects

I think it's an excellent idea. I think it allows those kids to go ahead and flourish rather than try and maintain them with a proscribed curriculum that you have. Or what you have for availability because of teachers. I've got kids that graduate with fifteen hours. (400, Moderate Tenure)

Yes, I'm one administrator that does favor that. I think that many times we have students that languish in their junior-senior years of high school and sometimes I think actually we lose those kids. Because of the boredom and because of the lack of challenge, it seems like they become out of touch with education and then some of those kids either quit school at the secondary level or never attend higher education. (900, Moderate Tenure)

2. Agree but only under certain conditions--7 subjects

Superintendents would agree to post-secondary curriculum offerings as long as they did not financially burden the school, the extant curriculum

personnel was available to staff the courses, and it did not lead to a system of tracking.

...I support that idea if it does not cause the old concept of tracking to find its way back into school which I have some concerns about that developing because, in the end, we have that level courses. You could eventually...the whole scheduling becomes more complicated and difficult to put together than the subjects where they are not specifically tracked in those subjects. (1700, High Tenure)

I think it's fine. I have no problems with it. I do have a little problem, philosophically, with the concept of students receiving credit for both high school and college for the same course. But I think having access to those kinds of programs is fine. (700, Moderate Tenure)

3. Ambivalent about post-secondary curriculum offerings--3 subjects

These superintendents were unsure of the idea because of they were concerned what effect it would have on current advanced high school courses or because they did not understand what effect it would have on Advanced Placement courses.

If the schools don't offer the advanced curriculum necessary for students to pursue other areas of interest and expertise good enough in those areas, then yes it should be done. (1200, Low Tenure)

These subjects believe that offering such courses would push students too far too early.

I think we're forcing kids to go too far too quick. We never allow kids to be kids. .... I'm not really for it. (600, Moderate Tenure)

We'll be able to do that kind of thing but I think there's very few high school kids that are ready for that and who should be subjected to that unless it's a watered-down college course. (600, Low Tenure)

On this curriculum change, as was apparent from the numbers above, the subjects were basically favorable. Twenty-five of the subjects were in favor of the courses, at least under some conditions. Most favorable, however, were the subjects in the moderate tenure group. The low tenure group was more split between agreement, ambivalence, and disagreement. The high tenure group was willing to accept the reform but was most likely to insist upon certain conditions.

Educational Technology: This question was included because many reformers are pointing towards the major impact of new technologies on the changing face of education. The question was: " Will educational technology radically change the nature of education in schools?" The responses fell into categories similar to those in the last few questions:

1. Agree, it will radically change the nature of education in schools--12

going to be something bigger and better coming along. I have no idea what it is, and I think it all reflects on the world of business, though. (700, Low Tenure)

I think that what schools are starting to do today in the area of technology has only scratched the surface of the tip of iceberg. I think what we see will be happening in school in say the year 2050 hasn't even been thought up yet. And I think this is one area of education that's going to totally change what we're doing now and what we're going to be doing in the future. (400, High Tenure)

2. Agree, it will radically change the nature of education in schools but only if certain conditions are met--3 subjects.

The only condition mentioned by the three subjects was the ability and willingness of teachers and administrators to change so that the relevant technologies could have an effect.

I think our biggest hand-up right now is that administration and teachers not knowing or understanding the technology and utilizing it. (600, High Tenure)

If you're going to have (a) successful technology program, the teachers need to be willing to change the way she organizes the class, the classroom structure.... (1700, High Tenure)

all mentioned financial constraints as being the primary reason for the slowing of the advance of educational technology into the classroom.

The limitation that I see there is money. And speaking as an administrator, I just feel that we are so limited in our resources and our ability to acquire the needed technology to teach our students that I don't think it will have the impact it should. (900, Moderate Tenure)
We don't have the money for it. We don't have enough computers. We don't have any TV dishes. And I don't know whether we will. (900, High Tenure)

4. Disagree, it will not radically change the nature of education in schools--9 subjects.
The feeling of these subjects was that technology would simply be another tool for educators and/or that education was not the sort of endeavor that could be radically changed.
There's been a lot of talk about it, a lot of hoopla. I don't believe it has currently modified education as much as everyone thought it would. We have in our system right now, probably 100 some computers. Really they're only a tool.... (1200, Low Tenure)
No, I don't think it's going to radically affect the way we teach in schools.

effectively if we choose to. It's another we might use to move closer to the J curve and further away from the bell curve. What does revolutionize education? I mean this social institution doesn't change very rapidly, in all honesty. We're more like we were 50 years ago than we're different. You know, the chalk may have become a magic marker but it's still exactly the same concept. The same thing we said about modern math and moving from phonics to site words and all kinds of things that every once in a while we forget that Socrates understood to be the key to education and that was the interaction between people. And to a certain extent, that is never going to change. That computer cannot...can't do that for a person. I can offer an awful lot of content but it can't offer the human dimension that this business is so dependent upon. (1400, Moderate Tenure)

The majority of the moderate tenure group was in agreement that educational technology would radically affect education.The low and high tenure groups were more skeptical with roughly half agreeing if certain conditions were met and the other half simply ambivalent or disagreeing with the notion.

Locus of Control: This question, which dealt primarily with the new state standards but peripherally with the Hornbeck proposals on a removal of those standards, brought out some spirited responses from the superintendents. But, similarly, the responses grouped into four categories

I think they're good in the fact that they cause us to have a standard to by...to make sure that we are toeing the mark. (500, Moderate Tenure) We keep talking about what should students know. What should they be able to do? And yet there is no move(ment) that I know of where we nationally are trying to set up and to determine and to establish what it is that kids ought to know in the classroom. Certainly if we're going to prepare kids for a world of work, prepare them so they can go to California or Louisiana or Virginia or Alaska or anyplace else, there are some certain skills that are identical that are needed in all those states to do the same job. .... Until you get educators off their soapbox saying, 'We want to determine locally what's best for kids,' we're barking up the wrong tree. You know we talk about autonomy and determining our own destiny and we completely ignore the fact that it isn't us that's important. It's the kids and what they know when they get out because we have no idea how to predict where they're going to be in the world. And all we're doing is preserving our own autonomy to say what we think these kids ought to know, here and now. And that's ridiculous. (900, High Tenure) My personal feeling is that in any business or profession, and we're in a big business, you ought to have certain standards. .... Unfortunately, in our history, sometimes if you don't require someone to do it they're not

doing

I have no problems with North Central Accreditation requiring school districts to do certain things because if you don't establish some standards or level of competency, some people are not going to even attempt to do the best job they can and, as a result, people are going to get hurt. And it's kids we're going to be hurting. (400, High Tenure)

2. Agree with the standards but only under certain conditions. These conditions included that the standards cover only the core curriculum, that the standards not include the vocational education standard, that the standards are not being enforced, and that the standards are not sufficiently funded by the state.

I can agree with the state mandates. ... What is happening is sometimes we do not have the dollars to go along with it and we need those dollars to go along with it to support that type of program. (600, High Tenure)

However, I think that outside the core curriculum the local school district should know best what their students need. And that is what they should be able to offer. (700, Low Tenure)

3. Ambivalent about the new state standards--5 subjects

I think there's a lot of things in there that aren't bad. They're pretty educational ideas. (But) I think in many cases they have created additional paperwork for what we're already doing in education.

(1000, Low Ten

hey're

mandating have to be in the schools, then I don't have any problem with that.... If it's just a professed self-interest because of the legislator thinking that this would be good, those types of things, then I don't care for them. ...I somewhat see it as local control but I also see it that some local schools would do nothing different if the state didn't sometimes come in and tell them that they had to do some things different. (400, Moderate Tenure)

4. Disagree with new state standards--12 subjects

Reasons for disagreement included a lack of need for the new standards, the impotence of the standards to cause real educational improvement, the perception that the manifest reason for the standards was to close small schools, the excessive number of standards, the inefficiency of state mandates applied to local situations, and the attention to meeting standards rather than serving students.

...I think sometimes that instead of mandating numerical standards, we'd do better to look at underlying causes, I think, and attack problems through programs. I really don't believe that increasing ...the number of required courses will necessarily positively effect the entire student body. (1200, Low Tenure)

I think it's one of the dumbest things the state's done in the fact that I

education. I can no longer put up with all of this crap they are coming up with. I am really having problems with it. Proliferation of committees. We're getting to the place that we're not going to have...we're going to go beyond democracy. We're heading to no government. We're getting to the place that the control of the schools is in no one's hands. .... Though now they come out and say we will have an advisory committee and it will include those people. For your multi-categorical, multi-ethnic, non -cultural, multi-sexist, or whatever, you are going to have these people on that committee and you are going to have that committee. It goes on and on. Til Finally, we're getting to the place that what we are doing is running around meeting with people and don't have a whole lot of time to work with kids. We are getting a lot of tired teachers. (3400, High Tenure)

Even though almost half of the subjects disagreed with the standards, only two of these agreed with the Hornbeck proposal of having no standards but only outcome objectives. Disagreement with this idea came primarily from suspicion towards the state's ability to compensate for district conditions when applying the outcome standards, the fear of punishment for failure to meet the outcomes, and a frustration with the idea of dropping the standards so soon after the new standards were implemented.

> percentage of low income, and often times in those low income areas, they do not have the motivation toward education. .... And you've got to take into account the raw product when you talk about outcomes. (1300, High Tenure)
>
> The penalty thing does bother me. I think there are some other things that could be done. (400, Low Tenure)
>
> Well, I think it was kind of unfortunate that they came in right after all these standards had been put in place and people have spent thousands of dollars and hours and hours doing that and all of a sudden they want to throw it all out. (300, Low Tenure)

Among the three tenure cohorts, only the high tenure group was strongly biased and that was towards disagreement with the state standards. No observable trends among the three groups existed in the perceptions of the Hornbeck proposals.

Assessment of Student Progress: Since all three reform proposals had additional or different assessment systems as major parts of their content, a question on assessment of student progress was included: This question was: "Do you feel that we are sufficiently assessing or measuring student progress in school today?" Anti-intuitively, responses which proposed that new or additional [illegible] would keep

1. Agree that new or different assessment is needed in schools--24 subjects.

As I go through our school, I think we could do a better job of assessing performance. I think we need to come up with better methods of assessing kids' performance. I don't think we've really perfected that yet that we really can't assess the performance of each and every kid we have in school. (500, Moderate Tenure)

We're not doing a very good job of assessing student performance because it's again a very, very complex undertaking. And the tools that we have to analyze student performance, even though they're better than they were 20 years ago, are not very precise. And there are a lot of things extremely important to student achievement that they simply don't mention. It's like saying you can measure the heart of a great athlete. No, you can't measure the heart of a great athlete. There's some things that are going to defy our best attempts because, again, this is a person to person business and there's a lot of unquantifiable stuff that goes into the whole process of education. And I think you've even got to be careful about relying only on quantification of student learning outcomes. You know we can design all sorts of measures to measure things about student achievement, but there's still going to be all kinds of problems

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on, program improvements on, they're doing a real disservice so you've got to be really careful. I like what Pat Dolan says. He's out of Kansas City. ...he's involved with the ISEA leadership conferences in Iowa this past year. A real good example, I think, of the danger of quantifying lots of things in public schools. He reminded us several times of the way we quantified war results from the Vietnam War. Up until the day the last helicopter flew out of Saigon, the body counts were in our favor. But we were losing the war. In public education, and I think he's right on target, we have to be careful about trying to manage public education like we manage this country and that's on quarterly reports that are numbers crunched by experts. Rather than short term...short term, quantitative, we need to make sure we have a good balance with long term, qualitative. And long term qualitative is a measurement challenge. Now you're talking about opinion surveys, you're talking about attitude, you're talking about satisfaction. Those are a lot more difficult to quantify but it can be done. (1400, Moderate Tenure)

2. Ambivalent about the need for new and additional assessment of student progress--2 subjects

In some cases, we are over-assessing. In some cases, there is over-

much time and it

Take

subjects. The basic reasons for disagreement with additional or new assessment were the feeling that the calls for assessment are designed to solve problems Iowa doesn't have and that additional assessment will not be put to any productive use.

I think we're doing a pretty good job.... I hear all these kinds of things and what I feel is all these national things are being picked up by everybody including Iowa and we don't have the problems that they have in other places. (600, Low Tenure)

I think we do a lot of measuring of student progress in schools. .... I think we should do something with these results. What do you do and the same thing applies through that we end up having teachers get more quizzes in a class and you end up having all but three kids doing well on the quiz. What do you do with those three kids? Do you move on to the next page or whatever they're at or do you make sure those kids are brought along? (600, High Tenure)

Since twenty-four of the thirty subjects agreed with the need for new or additional assessments, the majority of each tenure group was also in agreement. However, the entire moderate tenure cohort was in agreement while fewer in the low and high tenure cohorts were in agreement.

[illegible] one of the

[illegible]ifts.

The first part simply asked the importance of staff development and the second asked for specific, valuable staff development programs. The questions were: "Are staff development programs important for the teaching staff of schools? and "What kind of staff development programs do you think schools need?" None of the subjects disagreed with the idea that staff development programs were important. Thus, subjects agreed, agreed with certain conditions, or were ambivalent.

1. Agreed that staff development programs are important for the teaching staff of schools--21 subjects. Among these subjects, the point that staff development must be an on-going process was made by many of the superintendents.

A district that doesn't have staff development is in the Dark Ages. And there is a difference between staff development as I would define, between staff development and in-service. Because staff development is an on-going process where teachers are really assisted in improving their skills, as differentiated from in-service which is a one-time shot at something. (1500, Low Tenure)

I think that a district does need to look at what they're trying to do, look at it over several years, develop a long range plan for staff development,

[illegible] district needs to

[illegible] staff.

[illegible]e)

2. Agree that Staff Development is Important but under certain conditions--8 subjects. These eight subjects were adamant that staff development was a very important part of the educational program but also felt that certain conditions had to exist to make that staff development productive. The most prevalent condition was that of adequate finances and time. Five of these superintendents did not feel that current allowances of money and time made productive staff development possible. Of the other three, one felt that staff development was an individual responsibility rather than a district responsibility, one felt that staff development programs needed the collective support of the entire staff and that it was not possible, and one felt that it was important but that it was already taking too much time away from instruction of students.

"Oh, incredibly important. And we're doing a lousy job with that right now. Well, again, I think the new standards are right on target but we've got to have money and time. You know the 20 days for additional staff development. That's what we need, we need time. We need time to work with staff members. We need time for staff members to network with each other so that we can get more power out of what people learn. For

[illegible] from peer

[illegible]ers in the

[illegible]

on our system. But without a legitimate staff development program, we can't network that knowledge. We can't do a trainer of trainers thing without money and time and right now we don't happen to have either one. (1400, Moderate Tenure)

...how much of the responsibility for professional improvement belongs to the employing district and how much belongs to the individual's initiative who seeks to be and draw a professional wage. What I see is there is a landslide movement of making professional improvement the responsibility of the employing institution rather than the individual and his own initiative. (700, Moderate Tenure)

It's a very important function in schools. But it has gotten to the place that the instruction of the teacher is becoming so prevelant that the teacher is out of the classroom trying to learn something.... .... And the time lost is probably getting close to what we lost through sick leave. (3400, High Tenure)

3. Ambivalent about the importance of staff development programs--1 subject.

I've had mixed emotions.... (400, HIgh Tenure)

There was little noticeable bias by any one or more of the tenure cohorts towards any of the three response categories, except that the moderate tenure

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offered none, the totals will not add up to thirty. The response categories are listed below:

Cooperative Learning--	6
Madeline Hunter Training--	4
Assessment/Authentic Assessment--	4
Program based on Needs Assessment--	4
TESA/Effective Schools Research--	3
Curriculum--	2
Higher Order or Critical Thinking Skills--	2
Program based on District Goals--	2
Writing Objectives--	1
Learning Styles--	1
Outcomes-Based Education--	1
Iowa Writing Project--	1
Peer Coaching--	1
Educational Technology--	1
Peer Helpers--	1
Whole Language--	1
Quest--	1
Mastery Teaching--	1

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Integration of Social Services Agencies into the Schools: On this question, the subjects could find less consensus than on the ones immediatley above. The question was: "Due to the many social problems that are affecting children today, some people are suggesting that social service agencies and other community resources be given operating space in the school. Assuming that you had enough room to allow this, would you support it? Why or why not?" The assumption of enough space in the school was included because most schools would not have such space and this would have given the subjects a way of answering the question without consideration of the real content of the question, that of allowing these agencies to have influence in the schools. The responses fell into the following categories:

1. Agree with allowing social service agencies in the schools--14 subjects.

Hallelujah! Bring in the human services, police department, everybody. I'll just build a wing right on the end of the school. Bring them in a minute. I've always felt as districts have closed schools, they should turn them into centers for kids such as you're talking about. Bring all these groups in, give them the office space, absolutely. Treat the whole child, not just part of him. (900, Low Tenure)

I guess if we're really interested in serving the needs of kids and we all know that kids have those needs and we don't know what to do when we

[illegible] We're

[illegible] We want

every kid to pass and to go on and be the best they can be. Why wouldn't we want those people in those agencies in our schools? This isn't a grand collusion to control society. We're here to help kids. (1400, Moderate Tenure)

2. Agree with allowing social service agencies in the schools but only under certain conditons--3 subjects. These conditions included a certain degree of control over the actions of those agencies and desire to not have those agencies interfere with students' instructional time. ...I'd like to have some control of the situation." (600, Moderate Tenure) "I'm hesitant to bring in some of our health clinics that deal with providing condoms and stuff like that for kids. (1900, Low Tenure) Theoretically, if all those conditions existed and the function of those people and what they were doing did not pre-empt instructional time, then probably it would be all right. (700, Moderate Tenure)

3. Ambivalent about allowing social service agencies in the schools--5 subjects.

I'm not whole-heartedly supportive of that because I think what it's going to end up that it's another thing that we will have to do and to keep, not that we shouldn't be involved in it. We have a hard time getting done now what we're supposed to do. And if that's another thing that you as principal and the superintendent have to oversee. (500, Moderate Tenure)

...es in the schools-8

subjects. The reasons for disagreement included it not being the proper role of the school, it interfering with the educational role of the school, it not fulfilling any real need in most schools in Iowa, it leading to conflict between the beliefs of the school and the beliefs of the agencies, and a suspicion of the employees of the social agencies.

I could see some of my kids wanting to be going down there when they don't really need to be going down there. Unless you would have a certain way to choose and pick who went down there, if they had a certain problem or something. No, even if I would, I don't think I would want it. (400, Moderate Tenure)

I think maybe in your cities this is a possibility. But I think out in the rural communities, we are small enough that we can probably refer these students to those areas. (500, High Tenure)

...I'm immediately thinking of the concerns that some people have that some high schools have condoms passed out that are readily available to students and so forth. (1700, High Tenure)

We're trying to cure too many social ills that are not our job. (7000, Tenure)

The only tenure cohort group to differ greatly from the entire group of subjects was the high tenure cohort. Fully half of that group disagreed with the integration of social service agencies in the schools.

Instructional Skills of the Teaching Staff: This question inquired into the [illegible]erally. The question

was: "Do you think most teachers have the instructional skills to meet the needs of students who can be reached educationally?" This was followed with: "If not, how can this situation be improved?" The subjects responded in the following ways:

1. Agree that most teachers have the instructional skills to meet the needs of students--15 subjects.

I'd say the majority do. (400, Moderate Tenure)

...most teachers do have that capability. (700, Low Tenure)

2. Ambivalent about whether most teachers have the instructional skills to meet the needs of students--4 subjects.

If we're talking about academic, yes. The trouble is, in our society today, with a lot of single parents and latchkey kids, two parents working, the needs of students are changing. They've changed dramatically in the last ten years. So, that really is a many-sided question. I don't think we have the expertise to do some things that need to be done but academically, I think, probably for the most part, yes. (1200, Low Tenure)

I don't know. I'm sorry to answer it that way. I think they have the desire to. I don't know if they all have the training to do that. And I don't mean that negative towards them. (600, Moderate Tenure)

3. Disagrees that most teachers have the instructional skills to meet the needs of students--11 subjects.

[illegible] take the time. In my

school, I see so much of paperwork, so much of teachers handing kids busy work stuff. We do a lot of teaching from paper. We don't use the old lecture method and the board a lot and I think that's real beneficial time. That's where I have a real difficult time with a lot of young staff members, anymore, in the fact that they don't take the time for what I would call really solid teaching. They do a lot of busy work. (400, Low Tenure)

One of the things that really distresses me about this business that we're in is that I believe that the training of teachers, as they come into the field, isn't meant for what we're teaching today and what we know about human learning, is woefully, woefully inadequate. .... I think we have to back off and seriously re-think our pre-service training program for kids, for prospective teachers. I just don't think ...and I'm not being critical of professors and college. I think they're doing the best they can with what they have to work with. You know they're under a money crunch too. I don't think four years of content and methodology is sufficient, this day and age, to prepare teachers for the classroom. I think we're in the same point at this point in time when we did away with the normal teacher preparation programs years ago. Staff development comes into play. A new teacher comes out. We can't expect them to know everything there is to know because the field's constantly changing but we've really got to do a better job of staff development for our existing people. (1400, Moderate Tenure)

any of these three

positions according to tenure cohorts. A number of solutions were offered for the problem of lack of instructional skills. The number of solutions, again, will not sum to thirty because some respondents did not respond or did not feel any need to respond. These responses included:

1. Staff Development--9 subjects
2. Better pre-teacher training--2 subjects
3. More money for more staff and lower student:teacher ratios--1 subject
4. Pre-testing to eliminate students who have mastered subject matter so that remaining students can be educated more appropriately--1 subject
5. Teacher association removal of incompetent teachers--1 subject
6. Better enforcement of curriculum guides--1 subject
7. Increase in teacher pay to bring in better, brighter people--1 subject
8. Remediation by administration--1 subject

The moderate tenure cohort group was the most enthusiastic about staff development as a solution for inadequate instructional skills.

Additional Instructional Time for Students: The issue of whether schools are simply in need of more instructional time to better teach students was raised in three questions. These were: "Would you support a longer school year?" "Would you support a longer school day?" and "Would you support a six day week?" The strongest support was for the longer school year. Very little support existed for the

six day school week.

Responses to the question on the longer school year fell into the following categories:

1. Agree with a longer school year--15 subjects.

I would see a longer school year as being a school year that would be set up in two to three weeks off and attend three months again. And the reasons I am in favor of that is I think there is less loss of the skills they have attained. Right now they have 90 days basically to lose what they have attained and I think they lose a lot. (700, Low Tenure)

Should be year-round. It should have been year-round starting in about 1950. I'm talking about four quarters. You'd have your standard two weeks at Christmas and those other areas. But there'd be at least a week and a half to two and a half weeks between quarters. For kids, I say right now, we waste the first month to six weeks getting kids back in the mode of learning and reteaching them what they forgot. To me, that's ... you've wasted one-ninth of your budget. (900, Low Tenure)

I've looked at year-round school for years and I see tremendous opportunities for a school district to do a lot more things in the educational process than we now do, in the structure that we currently have. .... One of the things I can see us doing is there are a lot of things in the curriculum area that could be done in the summer time that we are not now doing because we're in school most of the time when there's

2. Ambivalent about a longer school year--3 subjects.

It would depend on what they want to do with it. If it's just days to add days, no. If they give good reason why they think the longer school year is going to be beneficial to the students, then yes I might support it. (400, Moderate Tenure)

I have mixed emotions about that. Technically, if we're going to compete with other countries that send their kids to school for longer days, a greater number of days, if we're going to compete, we need a longer school year. If we want to eliminate the regression that students go through over the summer, so that we don't have to review for six weeks to catch them back up, we need a longer school year. If we realize that we have left the agrarian age and are civilized people and that kids no longer have to go home and work on the farm, it doesn't make much sense to have summer off. Number one, it means more dollars. Those dollars are not going to be available. Number two, in this community and in many others, probably not in the inner-city but in this community, kids are on a whirlwind all summer long. They've got little league, they've got baseball, they've got music. In fact, our music program and some of our athletic programs, we have kids that may have to be gone a week or two during those very important activities because they have another activity they have to participate in. We've got fair, family vacation.... And I'm not so sure that summer isn't a very welcome

... I can argue on both sides

of the issue. (900, High Tenure)

3. Disagree with a longer school year--12 subjects. The reasons for disagreement included the inability of student and teachers to deal with a longer year, the initial need to make better use of our current time before adding days to the year, the need for a restructuring of the school year rather than lengthening it, and the resultant need for air conditioned buildings.

I don't think we can afford a longer school year at the present time with the construction of our buildings and such. It would take multi-millions of bucks to get these buildings so that they could survive a summer. None of them are insulated. None of them are air-conditioned. And in the fall and spring, we have difficulty keeping the kids involved because of the heat process. The concept is good but the cost factor I think would be almost prohibitive in preparing our buildings. (600, Moderate Tenure)

By the time the last of May rolls around, these kids are pretty fidgety and I think the staff is pretty fidgety. (400, Moderate Tenure)

I think we waste too much time in the school day that we have. The time on task in the classroom, the getting kids motivated, turning them down when the class is over. The majority of classes that I visit, there are always 10-15 minutes of down time. Until we learn to educate and motivate kids and get that teacher tuned up so that the minute that door [illegible] what they are there to

do, I can't see extending that. (700, High Tenure)

Responses to the question on the longer school day fell into the following categories:

1. Agree with a longer school day--5 subjects.

I wouldn't have any trouble with the longer school day. I would go another hour. (600, Moderate Tenure)

A little bit longer. We've been stretching our day out every couple years. We're studying now, if we can find the money, a mandated elementary foreign language program for everybody. And we have a major study going this year but we don't want to take anything else out. So we could use another hour, hour and a half a week in the elementary for that. So most schools could go another half an hour, 45 minutes school day without problems as far as I'm concerned. (7000, High Tenure)

2. Agree with a longer school day but only under certain conditions--2 subjects.

Well, I think the length of the school day is dependent locally and is dependent on the size of the district, and when I say size of the district, I'm talking about geographic size because here we transport 90% of our kids. We're a sparsely populated district over a large area. We have something like 190 square miles. So we have, in transporting 90% of

transportation riding

limits. I think that presents a different situation than w more concentrated population and the transportation effect on it. If we could take 30 minutes more riding ti of the day and put it in the school day, that would be ç would be educationally productive. (700, Moderate T Oh, high school if fine. But elementary is long enoug Tenure)

3. Disagree with a longer school day--23 subjects. F disagreement with the longer school day were similar to th school year and included the inability of student and teache productively use a longer day, the initial need to make bette time before adding time to the day, the potential interferenc activities, and the current time problems suffered by districts population over a large geographical area.

Right now, our buses go out at 7:30 in the morning o and so many times we have difficulty getting the bus order to have time to send it to the extracurricular act there's any more time in the day to put in. (600, Mod I don't know whether some kids...I'd have to think ab younger kids can stand a longer school day or not. A you had or whether there's a place where you no lor because they just are tired. (400, Moderate Tenure)

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can only sit so long, and I think kids are the same way too. When they are in school, they can only sit for so many hours per day and then they get antsy and then need to move around, too. (1500, Low Tenure)

There was only one response to the question on the six day school week and that was disagreement. The most prevalent reason given for this disagreement was no reason at all, other than a clearly enunciated 'no' and an abject look of revulsion. Others offered the inability of students and teachers to deal with or productively use a longer week, the initial need to make better use of our current time before adding time to the week, its inconsistency with the trend in America of moving towards a four day week rather than a six day week, and the potential loss of time with family members.

With the American culture? Our workers don't work six days. They're going to four. So, I think we'd be doing exactly the opposite that our culture is doing and you can't go that, that much in two different directions. (900, Low Tenure)

I was just wondering where you let kids be kids a little bit, too. Where you let them grow up and experience some of the other things rather than, quote, education all the time. .... With a Saturday, I think, there are also time when they need to be with that family. (400, Moderate Tenure)

Nah. No, because we'd have all kinds of ... again, this is a people-intensive business and I'd have people at each other's throats all the time. My example is going to be the end of third quarter. The third

[illegible] because, unless you

> have some snow days, you've got nothing but uninterrupted five days a week of instruction and I've never ceased in my thirteen years as an administrator to observe that there are more discipline problems, there are more staff relationship problems and, on balance, we're probably less effective towards the end of the third quarter just before Easter Break than we are any other time of the school year. In a people intensive business, there are times when people need a little time away. What's the old statement? 'Absence makes the heart grow fonder.' (1400, Moderate Tenure)

There did appear to be some trends in how the subjects answered these questions according to their tenure cohorts. On the question of the longer school year, nine of the ten subjects in the low tenure cohort accepted the idea. In the other two cohort groups, only three in each group accepted the idea. On the question of a longer school day, no tenure cohort-based trends were apparent. On the final question, that of a six day week, obviously each cohort group was the same since all subjects disagreed with the idea.